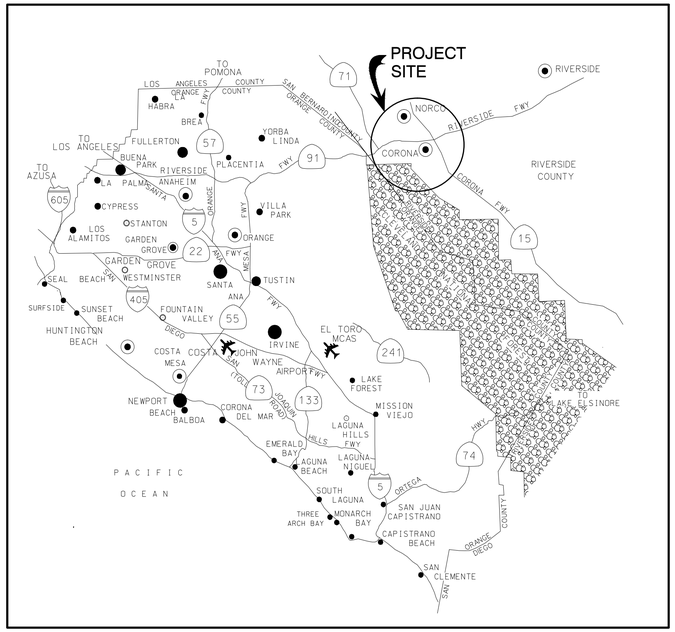


VICINITY MAP
N.T.S.

THE CITY OF

CORONA, CALIFORNIA

DEPARTMENT OF WATER AND POWER

RESIN TREATMENT OF NITRATE SOURCES

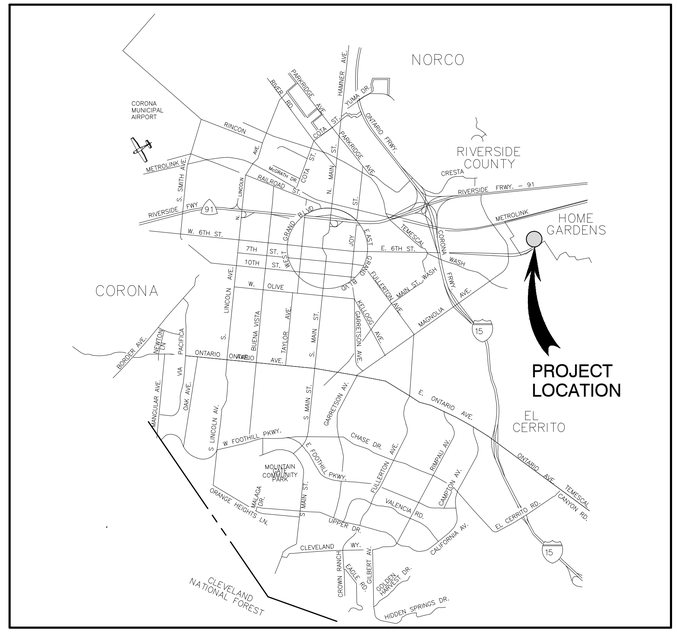
WELLS 32 AND 33 EQUIPPING
PROJECT NO. 70330507
JULY 2017

CITY COUNCIL

DICK HALEY, MAYOR

KAREN SPIEGEL, VICE MAYOR

JASON SCOTT EUGENE MONTANEZ RANDY FOX



LOCATION MAP
N.T.S.

INDEX OF SHEETS

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T-1	1	TITLE SHEET, VICINITY AND LOCATION MAPS AND INDEX OF SHEETS
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C-1	3	SITE PLAN
C-2	4	SITE IMPROVEMENT DETAILS
C-3	5	YARD PIPING AND FINISHED GRADE ELEVATIONS
M-1	6	WELL PUMP MECHANICAL PLAN
M-2	7	WELL PUMP MECHANICAL SECTIONS
M-3	8	MECHANICAL DETAILS
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L-1	21	LANDSCAPING AND IRRIGATION PLAN

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REGISTERED PROFESSIONAL ENGINEER
GARY J. HOBSON
No. 40779
Exp. 3/31/19
CIVIL
STATE OF CALIFORNIA

0 ½ 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 ¼ ½ — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
TITLE SHEET, VICINITY AND LOCATION MAPS AND INDEX OF SHEETS

Drawing No. 13-038U
T-1
Sht. 1 of 21

SYMBOLS:

LEGEND:

- EXISTING WATER
- EXISTING SEWER
- EXISTING STORM DRAIN GREATER THAN 58"
- EXISTING STORM DRAIN
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC CABLE
- CURB
- RIGHT OF WAY
- CENTERLINE
- PROPOSED WATER
- PROPOSED AIR VACUUM AND RELEASE VALVE
- PROPOSED BLOW OFF
- EXISTING MONUMENT
- PROPOSED VALVE
- STORM DRAIN MANHOLE
- WATER BACK FLOW PREVENTION DEVICE
- ELECTRICAL, TELEPHONE, OR FOC BOX
- DEMOLISH
- EDGE OF PAVEMENT
- FENCE
- FRENCH DRAIN

ABBREVIATIONS:

A.C.	ASPHALT CONCRETE	MJ	MECHANICAL JOINT
AMSL	ABOVE MEAN SEA LEVEL	MIL	MILLIMETER
AV/AR	AIR VACUUM AND AIR RELEASE VALVE	MIN	MINIMUM
AVE.	AVENUE	(N)	NEW
BC	BEGINNING OF CURVE	N&S	NORTH AND SOUTH
BLDG	BUILDING	NO	NUMBER
B.O.P.	BOTTOM OF PIPE	OC	ON CENTER
℄	CENTERLINE	OD	OUTSIDE DIAMETER
CL.	CLASS	PE	POLYETHYLENE
CML&C	CEMENT MORTAR LINED AND COATED	P/L	PROPERTY LINE
CONC.	CONCRETE	PP	PROPOSED PIPE
CONT	CONTINUOUS	PVC	POLYVINYL CHLORIDE
CT.	COURT	PWY	PARKWAY
D.I.	DUCTILE IRON	RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER	RD.	ROAD
D.I.P.	DUCTILE IRON PIPE	REQ'D	REQUIRED
DR	DRIVE	RW	RESILIENT WEDGE
DR	DIMENSION RATIO	R/W	RIGHT-OF-WAY
DWG.	DRAWING	S	SEWER
(E)	EXISTING	S	SLOPE
E	EAST	SCH	SCHEDULE
EC	ELECTRICAL	SD	STORM DRAIN
ELEC	ELECTRIC	SE	SAND EQUIVALENT
EL.	ELEVATION	SHT	SHEET
F.B.E.	FUSION BONDED EPOXY	S.S.	STAINLESS STEEL
F.F.	FINISHED FLOOR	ST.	STREET
F.G.	FINISHED GRADE	STA.	STATION
F.H.	FIRE HYDRANT	STL	STEEL
FLG	FLANGE	STD.	STANDARD
FM	FORCE MAIN	T	TELEPHONE
FT.	FEET	THK	THICK
G	GAS	TYP	TYPICAL
GALV	GALVANIZED	UNK	UNKNOWN
HDPE	HIGH DENSITY POLYETHYLENE	VCP	VITRIFIED CLAY PIPE
HORIZ.	HORIZONTAL	W	WATER
HWL	HIGH WATER LEVEL	W	WEST
ID	INSIDE DIAMETER	W/	WITH
IPS	IRON PIPE SIZE	WY	WAY
IRRA	IRRIGATION WATER PIPE		
LN	LANE		

TELEPHONE NUMBERS:

EMERGENCY	
CORONA POLICE DEPARTMENT	911 OR (951) 736-2333
CORONA FIRE DEPARTMENT	911 OR (951) 736-2222
CORONA COMMUNITY HOSPITAL, 812 S. WASHBURN	(951) 737-4343
UTILITIES	
UNDERGROUND SERVICE ALERT (USA)	811
CITY OF CORONA DWP	(951) 736-2233
SOUTHERN CALIFORNIA GAS	(909) 335-7851
SOUTHERN CALIFORNIA EDISON	(741) 796-9932
AT&T DISTRIBUTION	(714) 666-5692
AT&T TRANSMISSION	(714) 963-7964
SPRINT (FIBER OPTICS)	(909) 873-8022
OTHERS	
CORONA PUBLIC WORKS DEPARTMENT	(951) 739-4943
R.F. DICKSON STREET SWEEPING	(800) 841-7994
WESTERN WASTE	(951) 737-0343
CORONA POLICE DEPARTMENT (FOR STREET CLOSURE)	(951) 736-2330
CORONA FIRE DEPARTMENT (FOR STREET CLOSURE)	(951) 736-2221
HOME GARDES COUNTY WATER DISTRICT	
OFFICE	(951) 737-4741

X / X — NUMBER FOR DETAILS LETER FOR SECTIONS; SHEET DRAWN ON OR SHEET REFERENCED FROM

DETAIL OR SECTION REFERENCE

BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF GRANT STREET BETWEEN ESTELLE ST. AND A,T, & S.F. RAILROAD AS SHOWN BY MAP RECORDED IN BOOK 45, PAGE 68 OF PARCEL MAPS IN THE OFFICE THE COUNTY RECORDER OF THE COUNTY OF RIVERSIDE SHOWN AS NORTH 34°19'44" WEST THERON.

BENCH MARK:

CITY OF CORONA BENCH MARK NO. C-112.
DESCRIPTION: A 2.5" BRASS DISK STAMP C-112 SET IN THE TOP OF CURB, LOCATED 5' WEST OF THE BCR OF THE WESTERLY CURB RETURN OF THE INTERSECTION OF SAMPSON AVENUE & GRANITE STREET.

ELEVATION = 686.339

AKM JOB No. 0761209.00

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GENERAL NOTES:

ADMINISTRATIVE

1. PRIOR TO ANY CONSTRUCTION WORK, THE CONTRACTOR SHALL OBTAIN LICENSES AND PERMITS REQUIRED IN SPECIFICATIONS SECTION 00 89 01.

2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, THESE PLANS, CITY OF CORONA STANDARD PLANS AND SPECIFICATIONS, THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION(INCLUDING CITY MODIFICATIONS), ALL APPLICABLE AMERICAN WATER WORKS ASSOCIATION AWWA) STANDARDS, THE CALIFORNIA BUILDING CODE, LATEST EDITION, AND CALIFORNIA DEPARTMENT OF WATER RESOURCES CALIFORNIA WELL STANDARDS (BULLETIN 74-90 & 74-81), ALL TO THE SATISFACTION OF THE CITY OF CORONA. WHERE A DISCREPANCY BETWEEN STANDARDS EXISTS, THE ORDER OF PRECEDENCE IN THE CITY'S GENERAL CONDITIONS SHALL APPLY.

3. TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR WILL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY OF CORONA, HOME GARDENS COUNTY WATER DISTRICT, COUNTY OF RIVERSIDE, ENGINEERS, CONSULTANTS, AND AGENTS, THEIR DIRECTORS, OFFICERS, EMPLOYEES, VOLUNTEERS, AGENTS, AND EACH OF THEM FROM AND AGAINST ANY AND ALL LIABILITY, LOSSES, EXPENSES, DAMAGES, ATTORNEY'S FEES, AND OTHER COSTS, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF THIS WORK, INCLUDING ALL COSTS OF DEFENSE, WHICH ANY OF THEM MAY INCUR WITH RESPECT TO THE FAILURE, NEGLECT, OR REFUSAL OF CONTRACTOR TO FAITHFULLY PERFORM THE WORK AND ALL OF THE CONTRACTOR'S OBLIGATIONS UNDER THE AGREEMENT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY, THE ENGINEER, CONSULTANTS, OR AGENTS. SUCH COSTS, EXPENSES, AND DAMAGES SHALL INCLUDE ALL COSTS INCLUDING ATTORNEY'S FEES INCURRED BY THE INDEMNIFIED PARTIES IN ANY LAWSUIT TO WHICH THEY ARE A CONJOINED PART TO AS A RESULT OF ACTION, LIABILITY, OR CLAIM INCURRED BY THE CONTRACTOR.

4. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPORT DISCREPANCIES IN PLANS AND/OR FIELD CONDITIONS IMMEDIATELY TO THE CONSTRUCTION MANAGER FOR RESOLUTION PRIOR TO CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR DISCREPANCIES NOT SO REPORTED AND RESOLVED.

5. THE CONTRACTOR SHALL NOTIFY THE DISTRICT'S CONSTRUCTION MANAGER AT LEAST TWO (2) FULL WORKING DAYS PRIOR TO THE BEGINNING OF ANY WORK.

6. HOURS OF OPERATION/CONSTRUCTION ARE TO BE BETWEEN 7:00 A.M. AND 5:00 P.M. MONDAY THROUGH FRIDAY. WEEKEND WORK FOLLOWS COUNTY OF RIVERSIDE NOISE ORDINANCE.

7. THE CONTRACTOR SHALL COOPERATE WITH CONTRACTORS PERFORMING OTHER CONSTRUCTION WORK IN AREAS ADJACENT TO THE PROJECT SITE.

8. THE EXISTING FACILITY MUST REMAIN IN OPERATION FOR THE DURATION OF THE WORK. THE CONTRACTOR SHALL COORDINATE ALL ONSITE ACTIVITIES WITH THE HOME GARDENS COUNTY WATER DISTRICT OPERATIONS STAFF. ACCESS SHALL BE PROVIDED FOR OPERATIONS AND MAINTENANCE PURPOSES.

9. THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE BY THE CITY. ANY WORK THAT MAY PROVE DEFECTIVE IN WORKMANSHIP AND/OR MATERIALS WITHIN THE WARRANTY PERIOD SHALL BE REPAIRED OR REPLACED ALONG WITH ANY OTHER WORK WHICH MAY BE DAMAGED OR DISPLACED DURING THE PERFORMANCE OF WARRANTY WORK WITH NO ADDITIONAL EXPENSE TO THE CITY.

PERMITS / REGULATIONS

1. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR COMPLETION OF THE WORK.

2. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE GOVERNMENTAL AND LOCAL LAWS, REGULATIONS, AND ORDINANCES WITH REGARD TO TRAFFIC SAFETY, WORK HOURS, OPERATING HOURS, NOISE AND AIR POLLUTION, AND SANITARY CONDITIONS. SANITARY FACILITIES SHALL BE MAINTAINED ON SITE.

3. CONTRACTOR SHALL COMPLY WITH THE REGULATIONS OF THE "GENERAL CONSTRUCTION SAFETY ORDERS" AND "TRENCH CONSTRUCTION SAFETY ORDERS", STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF OCCUPATIONAL HEALTH AND SAFETY (CALOSHA). CONTRACTOR SHALL PRESENT EVIDENCE OF COMPLIANCE INCLUDING PERMITS FOR TRENCHING OVER FIVE FEET IN DEPTH TO THE CITY PRIOR TO CONSTRUCTION.

4. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF LOCAL, CITY, STATE, AND FEDERAL REGULATIONS CONCERNING CONFINED SPACE ENTRY.

5. DISPOSE OF EXCESS WATER IN ACCORDANCE WITH CONTRACT DOCUMENTS AND APPLICABLE NPDES PERMITS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED SURVEYOR OR REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING IN THE STATE OF CALIFORNIA. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE SHALL BE FILED AS REQUIRED BY THE LAND SURVEYOR'S ACT. SURVEY MONUMENTATION WORK SHALL BE INCLUDED IN THE COST OF THE WORK.

UTILITIES / EXISTING CONDITIONS

1. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES, PIPES, OR STRUCTURES SHOWN ON PLANS HAVE BEEN OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACT DRAWINGS SHOW THE GENERAL LOCATION OF EXISTING UNDERGROUND UTILITIES AND OTHER FEATURES BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY. APPROVAL OF THE PLANS BY THE CITY OF CORONA DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR THE COMPLETENESS OR THE LOCATION OR THE EXISTENCE OR THE NONEXISTENCE OF ANY UNDERGROUND UTILITY, PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR IS REQUIRED TO VERIFY EXACT LOCATIONS OF EXISTING UTILITIES AND FEATURES AND TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT UTILITY LINE.

2. THE CONTRACTOR SHALL PERFORM A UTILITY SEARCH FOR THE PROJECT AREAS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR ANY DAMAGE TO THESE LINES OR STRUCTURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY RESPECTIVE UTILITIES AND UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA TO DETERMINE THE EXACT FIELD LOCATION OF UTILITIES WHICH MAY CONFLICT WITH THE WORK.

3. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (1-800-422-4133) TWO FULL WORKING DAYS (48 HOURS MINIMUM) IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES, AND OBTAIN AN IDENTIFICATION NUMBER PRIOR TO PERMIT ISSUANCE, INCLUDING PAVEMENT REMOVAL. EXCAVATION AND A.C. OVERLAY, WHICH COULD AFFECT ANY UNDERGROUND UTILITIES.

4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY COMPANIES AT LEAST THREE FULL WORKING DAYS (72 HOURS MINIMUM) PRIOR TO BEGINNING ANY CONSTRUCTION IN THE VICINITY OF THEIR FACILITIES.

5. THE CONTRACTOR SHALL EXPOSE BY POTHOLING AT NO EXTRA COST TO THE CITY ALL UTILITIES AND SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITY AND DETERMINE THE LOCATIONS AND DEPTH OF ALL UNDERGROUND STRUCTURES AND UTILITIES THAT ARE IN THE VICINITY OF AND/OR MAY BE AFFECTED BY THE PROPOSED WORK PRIOR TO PERFORMING ANY CONSTRUCTION WORK WHICH COULD DAMAGE OR BE IN CONFLICT WITH SAID STRUCTURES AND/OR UTILITIES. CONTRACTOR SHALL ALSO DETERMINE THE TYPE OF MATERIAL AND CONDITION OF ANY UTILITY WHICH MAY BE EFFECTED BY OR AFFECT THE WORK.

6. LOCATION, DIMENSION, AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK OF THIS CONTRACT SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK, INCLUDING PROCUREMENT.

7. IF ANY EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICTS WITH PROPOSED IMPROVEMENTS, WORK IN THE EFFECTED AREA SHALL STOP AND THE CITY'S AUTHORIZED REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY IN WRITING.

8. ALL CONNECTION DETAILS HAVE BEEN DESIGNED AROUND THE ASSUMPTION THAT THE LOCATION OF ALL EXISTING UTILITIES ARE AS SHOWN ON THESE PLANS. IN ADDITION, THE PIPE MATERIALS AS SHOWN ARE BASED UPON EXISTING RECORDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXPOSE ALL PIPELINES INVOLVED TO VERIFY LOCATION, ELEVATION, AND PIPE MATERIALS PRIOR TO ORDERING ANY NEW MATERIALS INVOLVED IN THE CONNECTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ADJUSTMENTS AS REQUIRED DEPENDENT UPON ACTUAL FIELD CONDITIONS, BUT IN A MANNER ACCEPTABLE TO THE CITY.

9. IF THE UTILITIES AND SERVICE CONNECTIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY'S AUTHORIZED REPRESENTATIVE IMMEDIATELY IN WRITING, WITHIN ONE WEEK, THE CITY MAY MAKE CHANGES WITH ALIGNMENT AND GRADE OF WORK TO OBVIATE THE NECESSITY TO REMOVE, RELOCATE, PROTECT, TEMPORARILY MAINTAIN SUCH UTILITY FACILITIES, OR TO REDUCE THE COSTS OF THE WORK INVOLVED IN REMOVING, RELOCATING, PROTECTING, OR TEMPORARILY MAINTAINING SUCH UTILITY FACILITIES. ALL COSTS OF POT HOLING AND EXPOSING SHALL BE BORNE BY THE CONTRACTOR.

10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE OWNER OF THE UTILITY FOR RELOCATIONS. THE COST OF RELOCATION SHALL BE PAID BY THE CITY WHERE THE CITY DOES NOT HOLD OR EXERCISE RIGHTS OF RELOCATION. THE CONTRACTOR SHALL SCHEDULE HIS WORK WITH THE OWNER SO RELOCATION DOES NOT INTERRUPT THE CONTRACTOR'S WORK.

12. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR FOR THE CONTRACTOR'S WORK IN NEGOTIATION OR COORDINATION OF ABOVEGROUND OR UNDERGROUND UTILITIES RELOCATION. SUCH COST SHALL BE INCLUDED IN OTHER PAY ITEMS TO WHICH THE RELOCATION MAY PERTAIN.

13. ALL IRRIGATION LINES AND LANDSCAPING EFFECTED BY CONTRACTOR'S WORK SHALL BE REPLACED IN KIND AT NO COST TO THE OWNER. CONTRACTOR SHALL INSURE IRRIGATION SYSTEM REMAINS OPERATIONAL AT ALL TIMES.

JOB SITE CONDITIONS / POLLUTION PREVENTION

1. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT IS NOT LIMITED TO NORMAL WORKING HOURS.

2. THE CONTRACTOR SHALL PROTECT ALL EXPOSED AREAS OF THE SITE DURING THE CONSTRUCTION PERIOD AGAINST DAMAGE. ANY AND ALL SITE DAMAGE RESULTING DIRECTLY OR INDIRECTLY FROM THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE CITY.

3. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING DAMAGED OR ALTERED EXISTING IMPROVEMENTS WITHIN PUBLIC RIGHT-OF-WAY OR PROJECT SITE AS DIRECTED BY THE CITY'S AUTHORIZED REPRESENTATIVE, TO PRE-CONSTRUCTION CONDITION OR BETTER.

4. CONTRACTOR SHALL MAINTAIN THE WORK AREA IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE AGENCY HAVING JURISDICTION OVER THE AREA. STREETS SHALL BE KEPT CLEAN OF DEBRIS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY CLEAN-UP ON ADJACENT STREETS EFFECTED BY HIS CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL AT ALL TIMES BY WATERING.

5. REMOVE FROM THE SITE AND LEGALLY DISPOSE OF ALL MATERIALS RESULTING FROM DEMOLITION WORK WHICH ARE NOT OTHERWISE SHOWN FOR SALVAGE.

6. CONTRACTOR SHALL FOLLOW STATE OF CALIFORNIA REGULATIONS FOR THE TRANSPORT OF HAZARDOUS MATERIALS AND EMPLOY BEST MANAGEMENT PRACTICES FOR SPILL PREVENTION AND CONTROL ON THE PROJECT SITE.

7. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES AND SANTA ANA RWQCB, COUNTY OF RIVERSIDE, AND CITY OF CORONA REGULATIONS TO PREVENT EROSION AND STORM WATER POLLUTION.

8. CONTRACTOR SHALL NOT DROP HEAVY OBJECTS AND MAKE UNNECESSARY NOISE DURING CONSTRUCTION.

9. DISPOSAL OF ALL UNUSED MATERIALS, AC PAVEMENT, BASE, SOIL, PRETREATED BASE, ETC. SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S UNIT PRICE AND/OR LUMP SUM PRICE FOR THE WORK.

CONSTRUCTION / INSPECTION / RECORDS

1. PRIOR TO TAKING ANY WATER FROM THE HOME GARDENS COUNTY WATER DISTRICT (HGCWD) FIRE HYDRANTS, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE HGCWD TO OBTAIN A FIRE HYDRANT WATER METER TO BE USED AT APPROVED LOCATIONS ONLY. THE COST OF THE CONSTRUCTION METER DEPOSIT SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A CDPH APPROVED BACKFLOW DEVICE AT THE HGCWD APPROVED LOCATION(S) ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS OF OBTAINING AND USING WATER AND SHALL BE INCLUDED IN OTHER PAY ITEMS TO WHICH THE USE OF WATER MAY PERTAIN.

2. PROVIDE ALL CONSTRUCTION SURVEY CONTROLS REQUIRED FOR THE PROJECT.

3. ALL DUCTILE IRON FITTINGS AND VALVES SHALL BE PROTECTED FROM CORROSION WITH TWO LAYERS OF 8-MIL POLYVINYL PLASTIC FILM WRAP IN ACCORDANCE WITH ANSI A21.5 AND AWWA C105.

4. ALL NUTS AND BOLTS FOR UNDERGROUND INSTALLATIONS SHALL BE TYPE 316 STAINLESS STEEL.

5. ALL MATERIALS AND METHODS TO BE SUBJECT TO THE APPROVAL OF THE CITY'S AUTHORIZED REPRESENTATIVE.

6. ALL TRENCH BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE SECTION OF CITY OF CORONA STANDARD PLAN 150 MODIFIED EXCEPT THAT EXCAVATED MATERIALS CONSIDERED AS SUITABLE FOR BACKFILL BY THE SOILS ENGINEER AND APPROVED BY THE CITY'S AUTHORIZED REPRESENTATIVE MAY BE USED FOR BACKFILL. IN ADDITION, ALL TRENCH BEDDING AND BACKFILL SHALL BE CONTINUOUSLY INSPECTED, TESTED, AND CERTIFIED BY A SOILS ENGINEER. CERTIFICATION SHALL BE ON A CITY "SUPERVISED TRENCH BEDDING AND BACKFILL INSPECTION CERTIFICATE." FIELD DENSITY TEST SHALL BE MADE AT A FREQUENCY DETERMINED BY THE SOILS ENGINEER AND AS APPROVED BY THE CITY'S AUTHORIZED REPRESENTATIVE. PRIOR TO ACCEPTANCE OF THE TRENCH BEDDING AND BACKFILL BY THE CITY, THE SOILS ENGINEER SHALL SUBMIT A CERTIFIED REPORT TO THE CITY'S AUTHORIZED REPRESENTATIVES SUMMARIZING ALL TESTS TAKEN, INCLUDING DATES AND LOCATIONS.

7. INSPECTION TO BE CALLED FOR THROUGH THE CITY OF CORONA REPRESENTATIVE, TWO WORKING DAYS PRIOR TO ANY REQUIRED OBSERVATION. NO FACILITIES SHALL BE BACKFILLED UNTIL OBSERVED BY THE CITY.

8. THE CONTRACTOR SHALL COORDINATE ALL SHUT DOWNS, STARTUPS, AND TIE-INS WITH THE CITY A MINIMUM OF 14 CALENDAR DAYS PRIOR TO SCHEDULED SHUTDOWN, STARTUP, OR TIE-IN. CONTRACTOR SHALL NOT OPERATE ANY MAIN LINE WATER VALVE. CONTACT CITY OF CORONA UTILITY MAINTENANCE MANAGER AT (951) 830-2289 TO COORDINATE WORK.

9. DISINFECT PIPE, VALVES, AND FITTINGS BY SWABBING WITH CHLORINE SOLUTION PRIOR TO CONSTRUCTION IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

10. BAC-T TESTS SHALL BE COMPLETE AND ACCEPTABLE PRIOR TO CONSTRUCTING SYSTEM CONNECTIONS.

11. NOT USED

12. THE CONTRACTOR SHALL NOT ORDER OR PLACE ANY PORTLAND CEMENT CONCRETE OR ASPHALT CONCRETE PAVING UNTIL THE FORMS AND SUBGRADE AND/OR AGGREGATE BASE HAS BEEN INSPECTED AND APPROVED BY THE CITY'S AUTHORIZED REPRESENTATIVE IN THE FIELD.

13. THE FINAL SURFACE LAYER OR ASPHALT CONCRETE SHALL NOT BE PLACED UNTIL ALL ON-SITE AND OFF-SITE IMPROVEMENTS HAVE BEEN COMPLETED, INCLUDING ALL GRADING AND ALL UNACCEPTABLE CONCRETE WORK AND DEBRIS HAS BEEN REMOVED UNLESS APPROVED OTHERWISE IN WRITING BY THE CITY'S AUTHORIZED REPRESENTATIVE.

14. THE CONTRACTOR SHALL MAINTAIN CURRENT BLACKLINE DRAWINGS DURING CONSTRUCTION NEATLY MARKED IN RED INK TO REFLECT THE AS-BUILT CONDITIONS. CONTRACTOR SHALL MAKE UPDATES TO THE AS-BUILT DRAWINGS ON A DAILY BASIS. AS-BUILT DOCUMENTS SHALL BE MAINTAINED ON SITE AT ALL TIMES. AS-BUILT DRAWINGS SHALL INCLUDE ANY DEVIATION FROM PLANS INCLUDING PIPELINE LINE AND GRADE AND SUB-GRADE UTILITY LOCATIONS AND SIZE. CURRENT AS-BUILT DRAWINGS SHALL BE A CONDITION OF MONTHLY PROGRESS PAYMENT. CONTRACTOR SHALL REVIEW AS-BUILT DRAWINGS WITH THE CITY PRIOR TO SUBMITTING PROGRESS PAYMENT REQUEST. AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO FILING THE NOTICE OF COMPLETION AND SUBSEQUENT RELEASE OF RETENTION.

SAFETY / TRAFFIC CONTROL / SECURITY

1. NO TRENCH MAY BE LEFT OPEN OVERNIGHT UNLESS AUTHORIZED IN WRITING BY THE CITY'S AUTHORIZED REPRESENTATIVE.

2. UPON COMPLETION OF EACH DAY'S WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE WORK AREA SECURE AND FREE OF HAZARDS. THE CONTRACTOR SHALL PROVIDE NECESSARY TEMPORARY SIGNS, WARNING DEVICES, AND BARRICADES. TEMPORARY ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES DURING NON-CONSTRUCTION HOURS.

3. THE WALLS AND FACE OF ALL EXCAVATIONS FIVE (5) FEET IN DEPTH AND GREATER SHALL BE EFFECTIVELY GUARDED BY A SHORING SYSTEM, SLOPING OF THE GROUND, OR OTHER EQUIVALENT MEANS. TRENCHES OR EXCAVATIONS LESS THAN FIVE (5) FEET IN DEPTH SHALL ALSO BE GUARDED WHEN EXAMINATION INDICATES THAT HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM EXCAVATION OR TRENCH WORK AS DESCRIBED FROM CAL-OSHA. CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH STEEL PLATES IN AREAS REQUIRING VEHICLE/TRUCK TRAFFIC WHEN NOT IN USE. ALL OTHER OPEN EXCAVATIONS SHALL HAVE SAFETY FENCING AROUND THE ENTIRE EXCAVATION WHEN NOT IN USE.

4. NEITHER THE OWNER, NOR THE ENGINEER OF WORK WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, MAINTAIN AND INSPECT DAILY ALL SAFETY DEVICES, INCLUDING SHORING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.

5. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES AND SHALL BE PROTECTED WITH ADEQUATE BARRICADES, LIGHTS, SIGNS AND WARNING DEVICES AS PER THE CURRENT WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH) MANUAL OR THE MANUAL OF WARNING LIGHTS AND DEVICES FOR USE OF PERFORMANCE OF WORKS IN HIGHWAYS PUBLISHED BY THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS, COUNTY OF RIVERSIDE ENCROACHMENT PERMIT, AND TO THE DIRECTION OF THE COUNTY.

6. CONTRACTOR SHALL INSTALL, MAINTAIN, AND UPON COMPLETION OF THE WORK, REMOVE TEMPORARY CHAIN LINK FENCING AROUND THE PERIMETER OF THE PROJECT SITE.

7. PERFORM ALL WORK AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT IN ACCORDANCE WITH THE CALIFORNIA CODE OF REGULATIONS, TITLE 8, ARTICLE 37, PROVISIONS FOR PREVENTING ACCIDENTS DUE TO PROXIMITY TO OVERHEAD POWER LINES.

8. COOPERATE WITH PROPERTY OWNERS TO MAINTAIN, AS A MINIMUM, PEDESTRIAN AND EMERGENCY VEHICLE ACCESS TO PROPERTIES ADJACENT TO THE WELL SITE. LOCATE CONSTRUCTION EQUIPMENT TO LIMIT AS MUCH AS POSSIBLE THE DISRUPTION TO PRIVATE VEHICLE ACCESS. AT NO TIME IS ANY RESIDENCE OR BUSINESS TO BE WITHOUT ACCESS UNLESS OTHERWISE APPROVED BY THE CITY.

REGISTERED PROFESSIONAL ENGINEER — GARY J. HOBSON — No. 40779 — Exp. 3/31/19 — CIVIL — STATE OF CALIFORNIA

0 1/2 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 1/4 1/2 — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

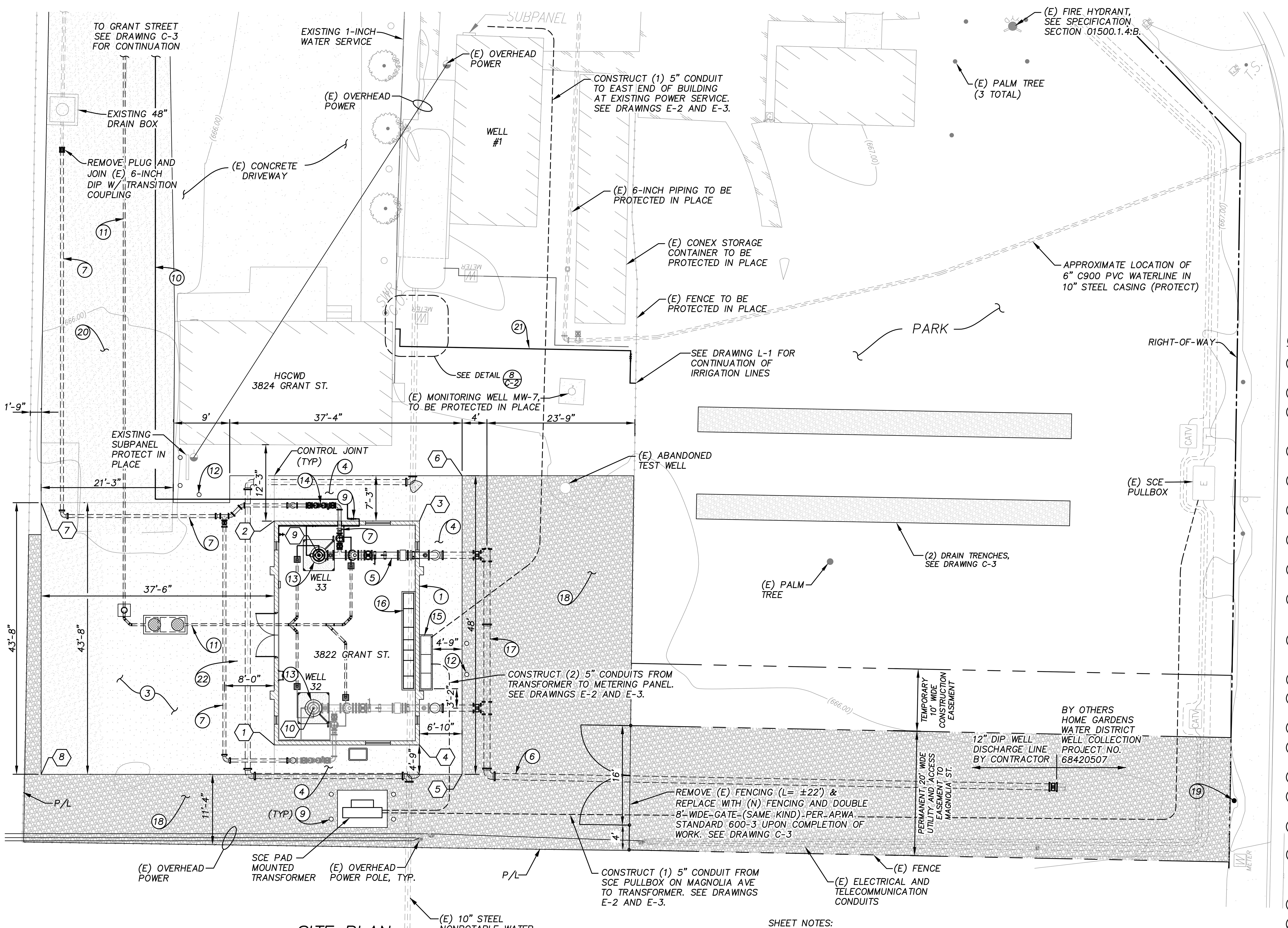
AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By _____ Date 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
GENERAL NOTES, ABBREVIATIONS AND LEGEND

Drawing No. 13-038U
T-2
Sht. 2 of 21



SITE PLAN

SCALE IN FEET
1 Inch = 8ft.

CAUTION! OVERHEAD POWER LINES

AKM JOB No. 0761209.00

Underground Service Alert
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PUMP STATION COORDINATE TABLE

No.	DESCRIPTION	NORTHING	EASTING
1	NORTH-WEST CORNER OF BUILDING	2265600.58	6175710.24
2	NORTH-EAST CORNER OF BUILDING	2265621.07	6175739.84
3	SOUTH-EAST CORNER OF BUILDING	2265601.89	6175753.12
4	SOUTH-WEST CORNER OF BUILDING	2265581.40	6175723.52
5	SOUTH-WEST CORNER OF SIDEWALK	2265573.08	6175723.54
6	SOUTH-EAST CORNER OF SIDEWALK	2265600.41	6175763.01
7	NORTH-EAST CORNER OF DRIVEWAY	2265653.55	6175720.94
8	NORTH-WEST CORNER OF DRIVEWAY	2265628.69	6175685.04
9	CENTER OF WELL 33	2265612.05	6175739.40
10	CENTER OF WELL 32	2265598.77	6175718.70

CONSTRUCTION/DESTRUCTION NOTES:

(1) CONSTRUCT WELL PUMP BUILDING PER ARCHITECTURAL AND STRUCTURAL DRAWINGS.

(2) NOT USED.

(3) CONSTRUCT 6-INCH CONCRETE OVER 6-INCH CRUSHED AGGREGATE BASE (COMPACTED TO 95% RELATIVE DENSITY) BUILDING ACCESS ROAD PER DETAIL 3 ON DRAWING C-2.

(4) CONSTRUCT CONCRETE SIDEWALK AROUND PROPOSED BUILDING (WEST, SOUTH, AND EAST SIDES) PER DETAIL 2 ON DRAWING C-2.

(5) PROVIDE AND INSTALL PUMP DISCHARGE PIPING INSIDE THE BUILDING PER DRAWING M-2.

(6) CONSTRUCT 12-INCH D.I. CLASS 350 BELOW GRADE PUMP DISCHARGE PIPING PER DRAWING C-3.

(7) CONSTRUCT 6-INCH CLASS 54 DUCTILE IRON PUMP TO WASTE LINE PER DRAWING C-3 AND M-2.

(8) PROVIDE AND INSTALL 1-INCH WATER METER PER CITY OF CORONA STANDARD DETAIL 414 (SEE C-3 FOR LOCATION).

(9) PROVIDE AND INSTALL 1-INCH REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY PER THE CITY OF CORONA STANDARD DETAIL 428. ALL PIPING DOWNSTREAM OF RP DEVICE SHALL BE ABOVE GRADE.

(10) PROVIDE AND INSTALL 1-INCH COPPER LINE FROM PROPOSED METER TO THE WELL BUILDING. SEE DETAIL 1 ON SHEET M-1 FOR INSIDE THE BUILDING PIPING AND CONNECTION TO WELL PUMPS.

(11) CONSTRUCT BUILDING DRAIN SYSTEM PER DRAWINGS C-3 AND M-2.

(12) PROVIDE AND INSTALL PROTECTIVE BARRIERS PER SCE REQUIREMENTS (TYP OF 9).

(13) CONSTRUCT WELL HEAD PER DRAWINGS M-3.

(14) PROVIDE AND INSTALL CITY AND SWRCB-DDW APPROVED 6-INCH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER DEVICE (FEBCO MASTER SERIES LF860).

(15) PROVIDE AND INSTALL SCE METER AND PULL SECTION PER DRAWING E-2.

(16) INSTALL CITY PROVIDED MOTOR CONTROL CENTER AND PLC/SCADA PER DRAWING E-2.

(17) CONSTRUCT 12-INCH D.I. CLASS 54 BELOW GRADE PUMP DISCHARGE PIPING PER DRAWINGS C-3 AND M-2.

(18) [hatch pattern] INDICATES REMOVE AND LEGALLY DISPOSE OF TOP 8-INCH OF SOIL (±110CY) OFF SITE. INSTALL 8-INCHES OF ¾-INCH CRUSHED ROCK. PROVIDE AND INSTALL GEOTEXTILE FABRIC BETWEEN NATIVE SOIL AND CRUSHED ROCK.

(19) REMOVE AND LEGALLY DISPOSE OF THE TREE OFF SITE.

(20) REMOVE AND REPLACE EXISTING PCC PAVEMENT DRIVEWAY PER DETAIL 3 DRAWING C-2. SEE DRAWING C-3 FOR EXTENT OF REPLACEMENT.

(21) CONSTRUCT DRIP IRRIGATION SYSTEM PER DRAWING L-1 AND TIE-IN TO (E) WATER SUPPLY PER DETAIL 8, DRAWING C-2.

(22) JOIN (E) 10" STEEL PIPE (2 PLACES) PER DETAIL 6, DRAWING C-2. RELOCATE BY CONSTRUCTING 10" CL. 350 DUCTILE IRON PIPE, DOUBLE WRAPPED IN 8-MIL POLYETHYLENE, PER PLAN. REMOVE ALL (E) PIPE BETWEEN CUTS. MAINTAIN 30" MIN. COVER. COORDINATE WITH HOME GARDENS COUNTY WATER DISTRICT DURING TIE-IN.

SHEET NOTES:

1. ADJOINING GRADES AT FINISHED FLOOR OF WELL HOUSE, CONCRETE WALKWAY AND HOUSEKEEPING PADS SHALL BE 0.5-FT BELOW FINISHED FLOOR/TOP OF PAD. GROUND SHALL BE SLOPED AWAY AT 2% (MIN.) IN ALL DIRECTIONS FROM STRUCTURES FOR A MINIMUM DISTANCE OF 10-FT. OVERALL SITE SHALL MAINTAIN THE ORIGINAL EXISTING DRAINAGE PATTERN.
2. OVERHEAD POWER LINES EXIST ON SITE. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE WORKING CLEARENCES IN ACCORDANCE WITH THE CODE OF FEDERAL REGULATIONS TITLE 29, VOLUME 8, PART 1926 AND CALIFORNIA CODE OF REGULATIONS TITLE8, SECTION 2946.
3. PIPING SHOWN AS SCREENED (WELL 32) SHALL BE INSTALLED IN THE FUTURE AND IS FOR REFERENCE ONLY.

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON R.C.E. No. 40779
Date JULY 2017

Reference Plans for these Improvements | Date | By | REVISIONS | App'd

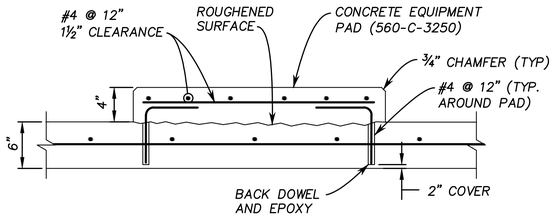
AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering ______
Operations ______

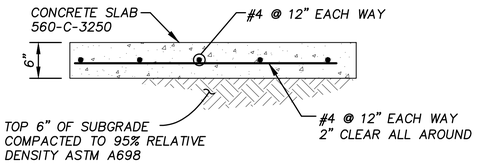
Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
SITE PLAN

Drawing No. 13-038U
C-1
Sht. 3 of 21



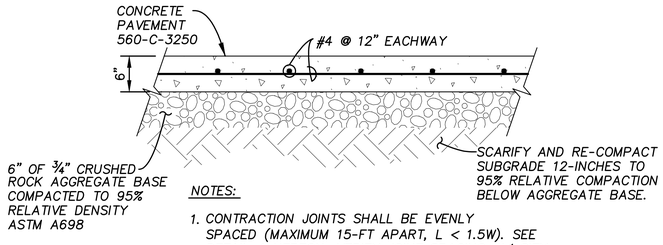
EQUIPMENT PAD DETAIL 1
NOT TO SCALE



NOTES:

1. PROVIDE ½" JOINT FILLER WHERE SIDEWALK IS ADJACENT TO OTHER STRUCTURES.
2. SLOPE SIDEWALK ¼" PER FOOT. SLOPE AWAY FROM ANY ADJACENT STRUCTURES.
3. WIDTH AS SHOWN ON DRAWINGS.
4. PROVIDE ¾" CHAMFER ON EXPOSED CORNERS.
5. CONTRACTION JOINTS SHALL BE EVENLY SPACED (MAXIMUM 8-FT APART, L < 1.25W). SEE DETAIL 4 HEREON. VERIFY JOINT SPACING W/ CITY.

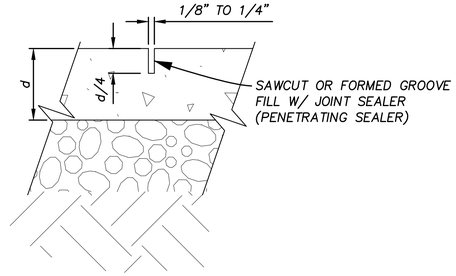
CONCRETE WALKWAY 2
NOT TO SCALE



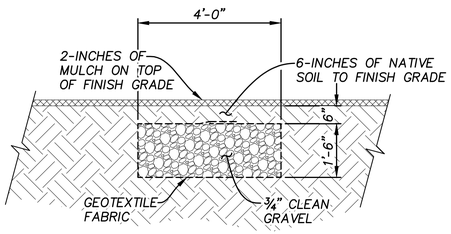
NOTES:

1. CONTRACTION JOINTS SHALL BE EVENLY SPACED (MAXIMUM 15-FT APART, L < 1.5W). SEE DETAIL 4 HEREON. VERIFY JOINT SPACING W/ CITY.
2. PAVEMENT SHALL BE BROOM FINISHED TRANSVERSLY.
3. DOWEL REBARS INTO EXISTING CONCRETE SLAB WHERE APPLICABLE (DRILL ¾" ø HOLE, 6" DEEP AND EPOXY IN PLACE).

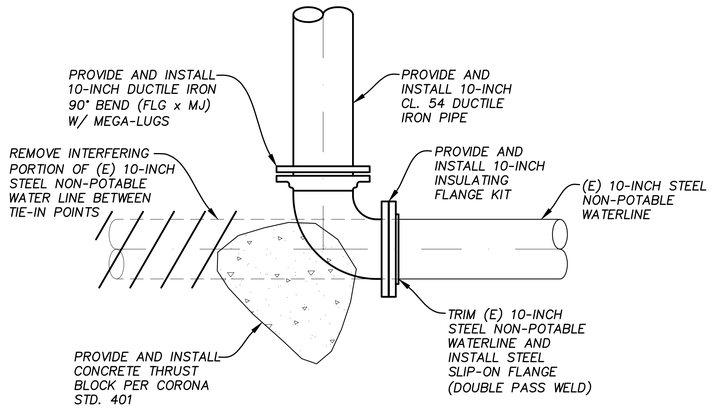
BUILDING ACCESS ROAD 3
NOT TO SCALE



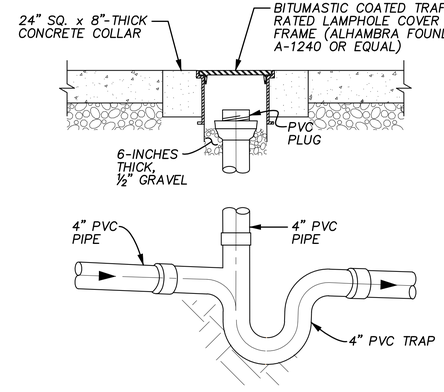
TYP. CONTROL JOINT 4
NOT TO SCALE



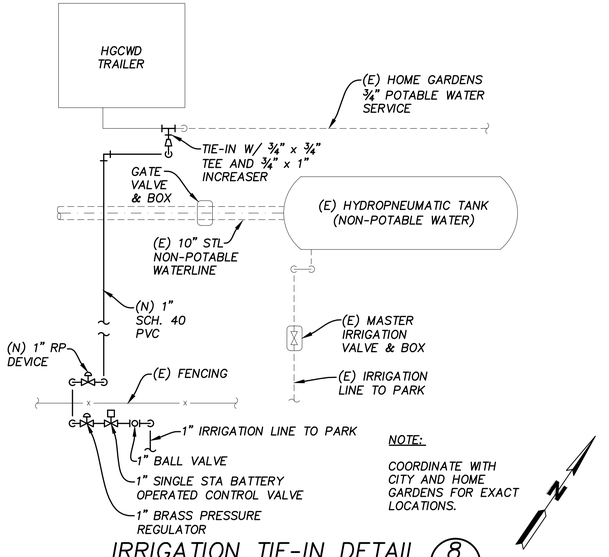
DRAIN TRENCH SECTION 5
NOT TO SCALE



TIE-IN DETAIL (TYP) 6
NOT TO SCALE



CLEANOUT DETAIL 7
NOT TO SCALE



NOTE:

COORDINATE WITH CITY AND HOME GARDENS FOR EXACT LOCATIONS.

IRRIGATION TIE-IN DETAIL 8
NOT TO SCALE

AKM JOB No. 0761209.00

Underground Service Alert
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Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering
Operations

Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
SITE IMPROVEMENT DETAILS

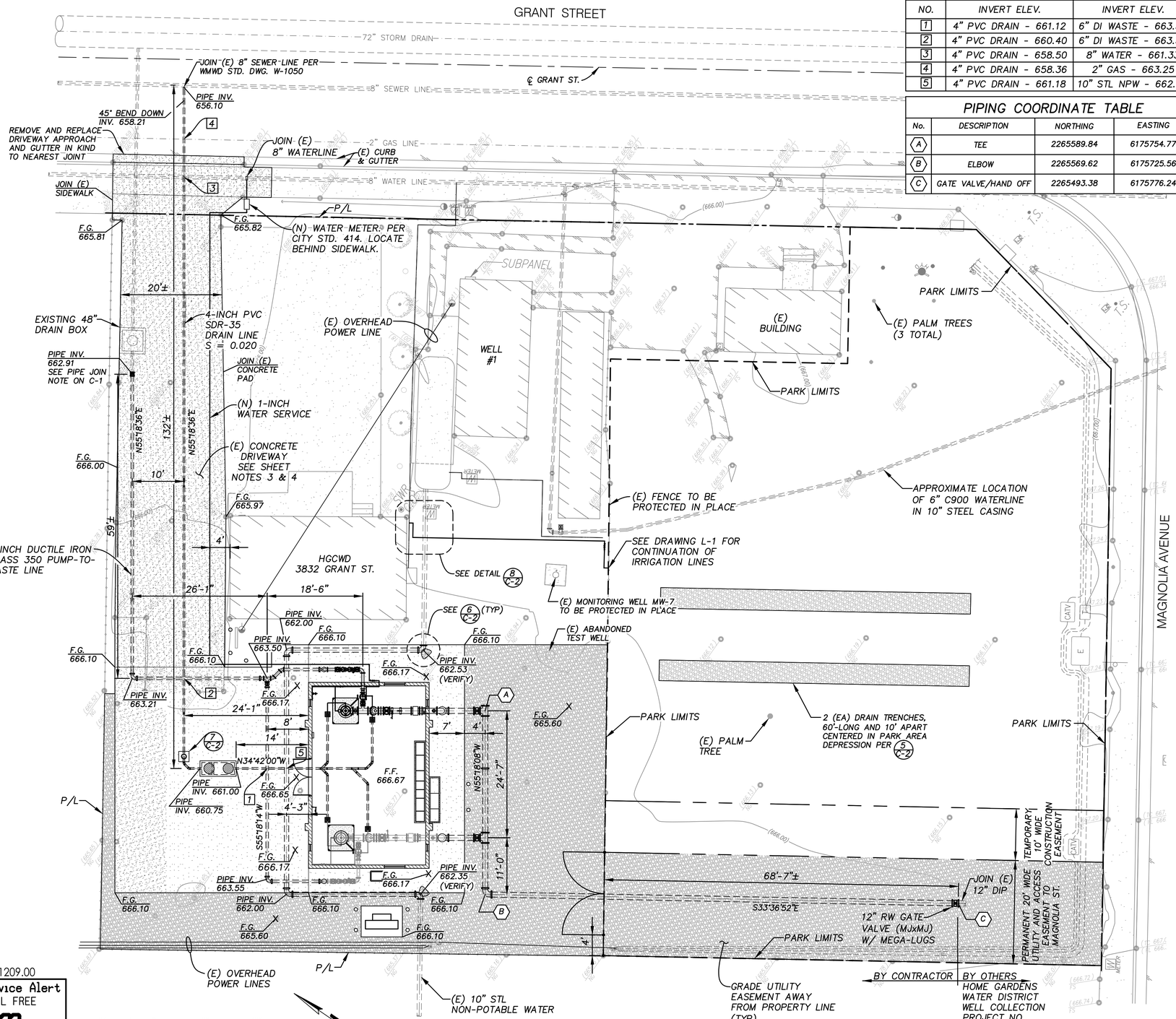
Drawing No. 13-038U
C-2
Sht. 4 of 21

CROSSING PIPE ELEVATIONS

NO.	INVERT ELEV.	INVERT ELEV.
1	4" PVC DRAIN - 661.12	6" DI WASTE - 663.52
2	4" PVC DRAIN - 660.40	6" DI WASTE - 663.32
3	4" PVC DRAIN - 658.50	8" WATER - 661.33
4	4" PVC DRAIN - 658.36	2" GAS - 663.25
5	4" PVC DRAIN - 661.18	10" STL NPW - 662.00

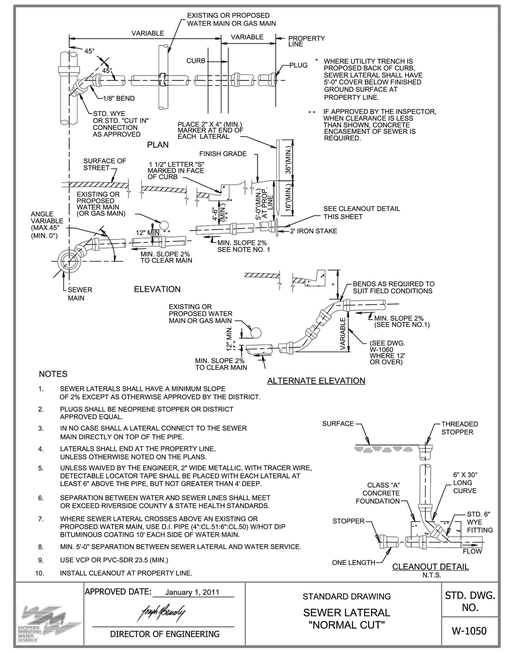
PIPING COORDINATE TABLE

No.	DESCRIPTION	NORTHING	EASTING
A	TEE	2265589.84	6175754.77
B	ELBOW	2265569.62	6175725.56
C	GATE VALVE/HAND OFF	2265493.38	6175776.24



SITE PLAN

CAUTION! OVERHEAD POWER LINES



NOTES

1. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2% EXCEPT AS OTHERWISE APPROVED BY THE DISTRICT.
2. PLUGS SHALL BE NEOPRENE STOPPER OR DISTRICT APPROVED EQUAL.
3. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
4. LATERALS SHALL END AT THE PROPERTY LINE, UNLESS OTHERWISE NOTED ON THE PLANS.
5. UNLESS WAIVED BY THE ENGINEER, 2" WIDE METALLIC, WITH TRACER WIRE, DETECTABLE LOCATOR TAPE SHALL BE PLACED WITH EACH LATERAL AT LEAST 6" ABOVE THE PIPE, BUT NOT GREATER THAN 4' DEEP.
6. SEPARATION BETWEEN WATER AND SEWER LINES SHALL MEET OR EXCEED RIVERSIDE COUNTY & STATE HEALTH STANDARDS.
7. WHERE SEWER LATERAL CROSSES ABOVE AN EXISTING OR PROPOSED WATER MAIN, USE D.I. PIPE (4"-CL 51-6"-CL 50) W/HOT DIP BITUMINOUS COATING 10' EACH SIDE OF WATER MAIN.
8. MIN. 5'-0" SEPARATION BETWEEN SEWER LATERAL AND WATER SERVICE.
9. USE VCP OR PVC-SDR 23.5 (MIN.)
10. INSTALL CLEANOUT AT PROPERTY LINE.

CLEANOUT DETAIL
N.T.S.

APPROVED DATE: January 1, 2011
DIRECTOR OF ENGINEERING

STANDARD DRAWING
SEWER LATERAL "NORMAL CUT"

STD. DWG. NO. W-1050

PARK IMPROVEMENT NOTES:

1. CONTRACTOR SHALL REMOVE ALL EXISTING SURFACE VEGETATION AND DEBRIS WITHIN THE PARK LIMITS INDICATED.
2. CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS: INCLUDING BURIED: IRRIGATION SYSTEM, WATER MAINS, SCE ELECTRIC UNDERGROUND, FENCING, UTILITY BOXES, AND TREES NOT IDENTIFIED FOR REMOVAL.
3. CONTRACTOR SHALL PROVIDE FINE GRADING TO DIRECT SURFACE FLOW TOWARDS THE CENTER OF THE PARK AND DRAIN TRENCHES.
4. CONTRACTOR SHALL CONSTRUCT 2 (EA) DRAIN TRENCHES 60'-LONG. TRENCHES SHALL CONSIST OF GEOTEXTILE FABRIC THAT COMPLETELY WRAPS ¾-INCH UNIFORM/CLEAN GRAVEL. 6-INCH OF TOP SOIL SHALL BE PLACED ON TOP OF THE DRAIN TRENCH. SEE SECTIONS 31 05 16 FOR AGGREGATE AND 33 46 26 FOR GEOTEXTILE FABRIC SPECIFICATIONS. THE CITY SHALL LOCATE TRENCH PLACEMENT FOLLOWING FINE GRADING.
5. CONSTRUCT DRIP IRRIGATION SYSTEM PER DRAWING L-1 AND TIE-IN TO (E) WATER SUPPLY PER DETAIL 8, DRAWING C-2.
6. CONTRACTOR SHALL PROVIDE AND INSTALL FORTY (40) 1-GALLON SIZE "PURPLE TRAILING LANTANA" (L. MONTEVIDENSIS). SEE LANDSCAPING AND IRRIGATION PLAN, DRAWING L-1.
7. CONTRACTOR SHALL PROVIDE 2-INCH MULCH LAYER OVER THE PARK LIMITS INDICATED, EXCLUDING THE CRUSHED ROCK UTILITY AND ACCESS EASEMENT. MULCH SHALL BE UNDERPLAYED BY A GEOTEXTILE WEED BARRIER WITH OVERLAPPING SEEMS. SEE 31 05 19 FOR GEOTEXTILE FABRIC SPECIFICATIONS.

NOTES:

1. ALL PIPING BELOW GRADE SHALL BE DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE ENCASEMENT.
2. ALL BELOW GRADE DUCTILE IRON PIPING, FITTINGS, VALVES, ETC. UNLESS OTHERWISE INDICATED OR SHOWN SHALL HAVE RESTRAINED MECHANICAL JOINTS ("MEGA-LUG" TYPE OR EQUAL FOR FITTING CONNECTIONS AND LOCKING STYLE GASKETS FOR PIPE CONNECTIONS), AND DOUBLE-WRAP IN BLUE COLORED 8-MIL POLYETHYLENE SLEEVE.
3. SAW CUT (E) CONCRETE DRIVEWAY FOR INSTALLATION OF 6-INCH PUMP-TO-WASTE LINE AND 4-INCH DRAIN LINE. ALL REMOVED AND DAMAGED CONCRETE SHALL BE REPLACED IN KIND. SEE DETAIL 3 ON DRAWING C-2. AC PAVEMENT REPLACEMENT IN GRANT STREET SHALL CONFORM TO COUNTY OF RIVERSIDE PERMIT REQUIREMENTS.
4. ALL REMOVED CONCRETE SHALL BE LEGALLY DISPOSED OF OFF SITE.
5. DRAIN PIPE SLOPE SHALL BE MIN. ¼"/FT INSIDE THE BUILDING.
6. PIPING SHOWN AS SCREENED (WELL 32) SHALL BE INSTALLED IN THE FUTURE AND IS FOR REFERENCE ONLY.

AKM JOB No. 0761209.00

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12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF
Date JULY 2017 GARY J. HOBSON R.C.E. No. 40779
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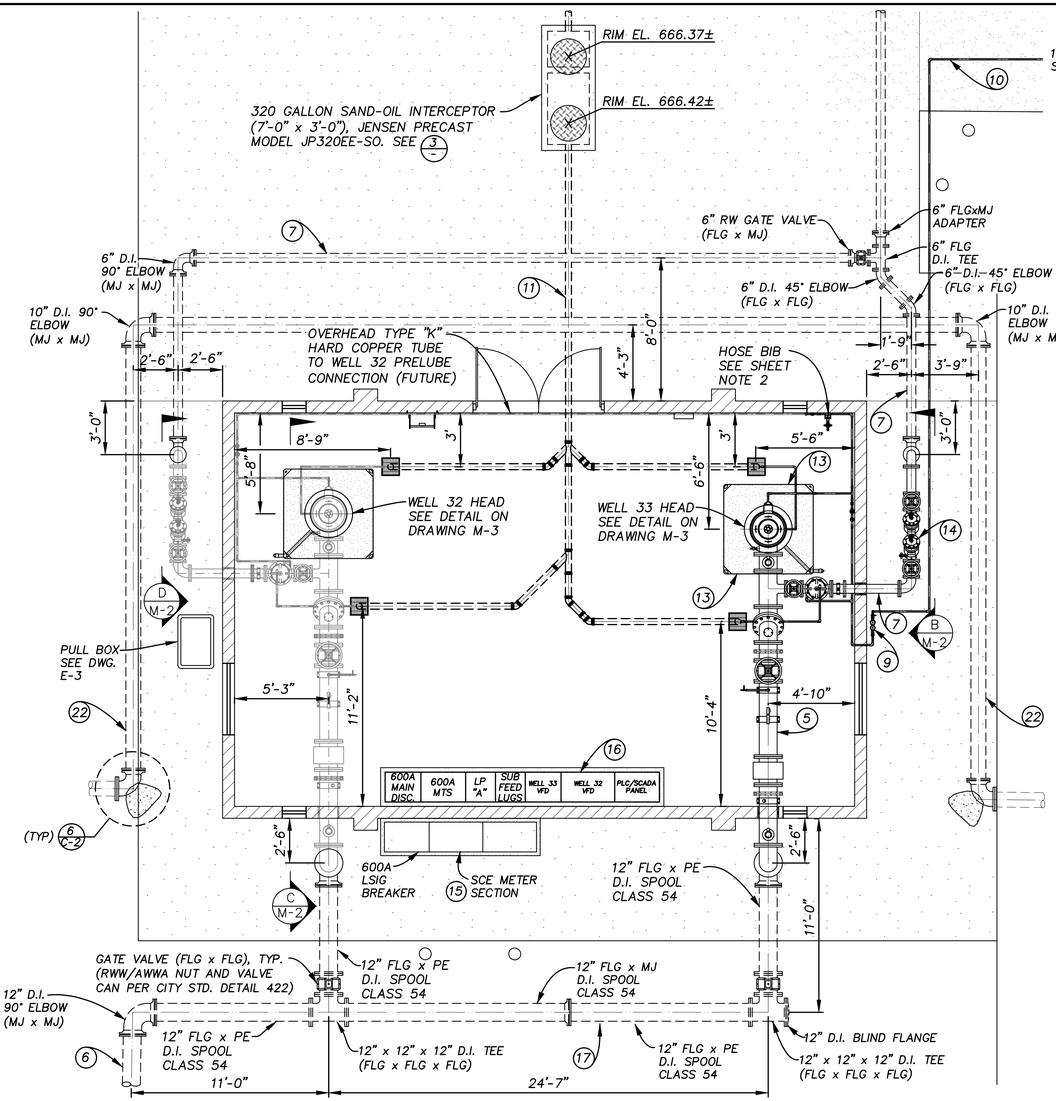
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
YARD PIPING AND FINISHED GRADE ELEVATIONS

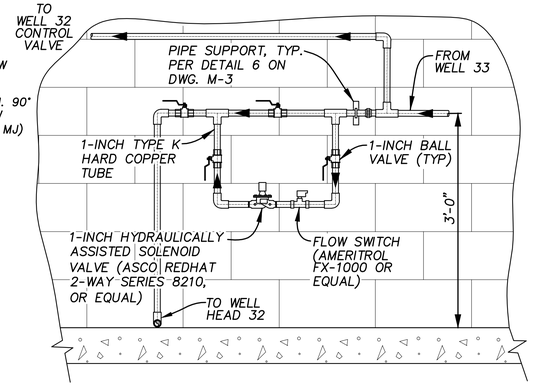
Drawing No. 13-038U
C-3
Sht. 5 of 21



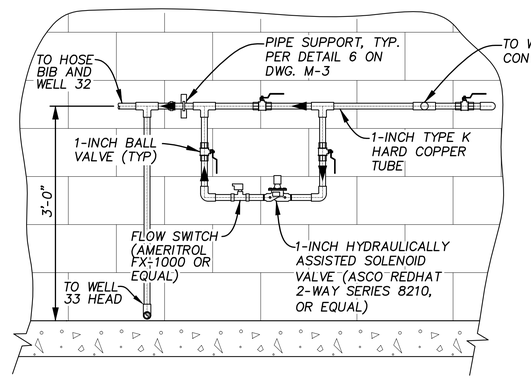
MECHANICAL LAYOUT

SCALE: ¼" = 1'-0"

NOTE: INSTALL 1-INCH BALL VALVE AND END CAP DOWN STREAM OF HOSE BIB FOR FUTURE CONNECTION TO WELL 32 PIPING



WELL 32
(FUTURE PIPING)



WELL 33

WELL 32 AND WELL 33 PRE-LUBE SYSTEM DETAIL 1/--

SCALE: ⅜" = 1'-0"

SHEET NOTES:

1. ALL PIPING BELOW GRADE SHALL BE DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SLEEVE.
2. HOSE BIB SHALL BE FURNISHED W/ VACUUM BREAKER.
3. SEE DRAWING M-2 FOR LIST OR MATERIALS NOT CALLED OUT HEREON.
4. ALL BELOW GRADE DUCTILE IRON PIPING, FITTINGS, VALVES, ETC. UNLESS OTHERWISE INDICATED OR SHOWN SHALL HAVE RESTRAINED MECHANICAL JOINTS ("MEGA-LUG" TYPE OR EQUAL FOR FITTING CONNECTIONS AND LOCKING STYLE GASKETS FOR PIPE CONNECTIONS), AND DOUBLE-WRAP IN BLUE COLORED 8-MIL POLYETHYLENE SLEEVE.
5. PIPING SHOWN AS SCREENED (WELL 32) SHALL BE INSTALLED IN THE FUTURE AND IS FOR REFERENCE ONLY.

CONSTRUCTION NOTES:

(5) PROVIDE AND INSTALL PUMP DISCHARGE PIPING INSIDE THE BUILDING PER DRAWING M-2.

(6) CONSTRUCT 12-INCH D.I. CLASS 350 BELOW GRADE PUMP DISCHARGE PIPING PER DRAWING C-3.

(7) CONSTRUCT 6-INCH CLASS 54 DUCTILE IRON PUMP TO WASTE LINE PER DRAWING C-3.

(9) PROVIDE AND INSTALL 1-INCH REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY PER THE CITY OF CORONA STANDARD DETAIL 428. ALL PIPING DOWNSTREAM OF RP DEVICE SHALL BE ABOVE GRADE.

(10) PROVIDE AND INSTALL 1-INCH COPPER LINE FROM PROPOSED METER TO THE WELL BUILDING. SEE DETAIL 1 ON SHEET M-1 FOR INSIDE THE BUILDING PIPING AND CONNECTION TO WELL 33 PUMP.

(11) CONSTRUCT BUILDING DRAIN SYSTEM PER DRAWINGS C-3 AND M-2.

(13) CONSTRUCT WELL HEAD PER DRAWING M-3.

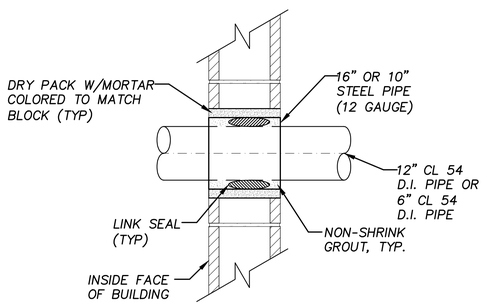
(14) PROVIDE AND INSTALL CITY AND SWRCB-DDW APPROVED 6-INCH REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER DEVICE (FEBCO MASTER SERIES LF860).

(15) PROVIDE AND INSTALL SCE METER AND PULL SECTION PER DRAWINGS E-2.

(16) INSTALL CITY PROVIDED MOTOR CONTROL CENTER AND PLC/SCADA PER DRAWINGS E-2.

(17) CONSTRUCT 12-INCH D.I. CLASS 54 BELOW GRADE PUMP DISCHARGE PIPING PER DRAWINGS C-3 AND M-2.

(22) JOIN (E) 10" STEEL PIPE (2 PLACES) PER DETAIL 6, DRAWING C-2. RELOCATE BY CONSTRUCTING 10" CL. 350 DUCTILE IRON PIPE, DOUBLE WRAPPED IN 8-MIL POLYETHYLENE, PER PLAN. REMOVE ALL (E) PIPE BETWEEN CUTS. MAINTAIN 30" MIN. COVER. COORDINATE WITH HOME GARDENS COUNTY WATER DISTRICT DURING TIE-IN.

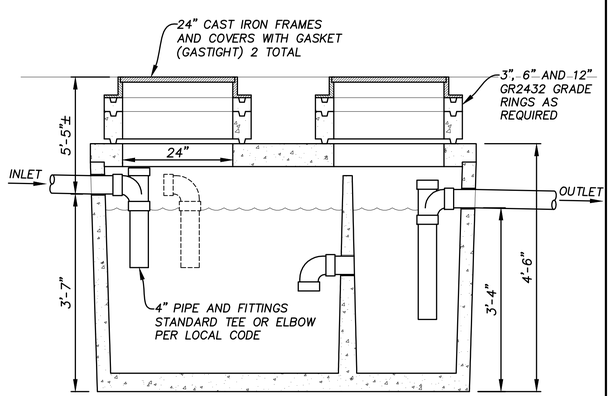


NOTE:

1. CONTRACTOR SHALL USE 16" CASING FOR 12" DISCHARGE LINE AND 10" CASING FOR 6" PUMP TO WASTE LINE.

MASONRY WALL PENETRATION 2/--

NOT TO SCALE



SAND-OIL INTERCEPTER 3/-

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REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

0 ½ 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 ¼ ½ — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

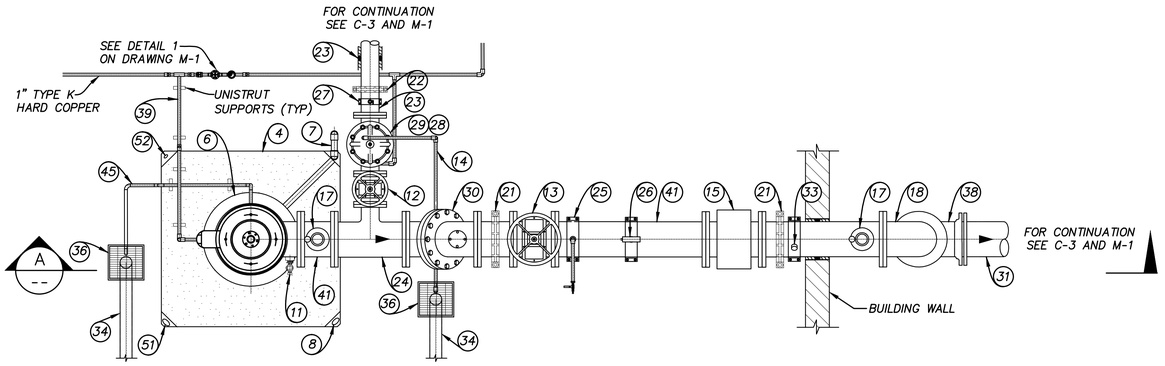
AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By _____ 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

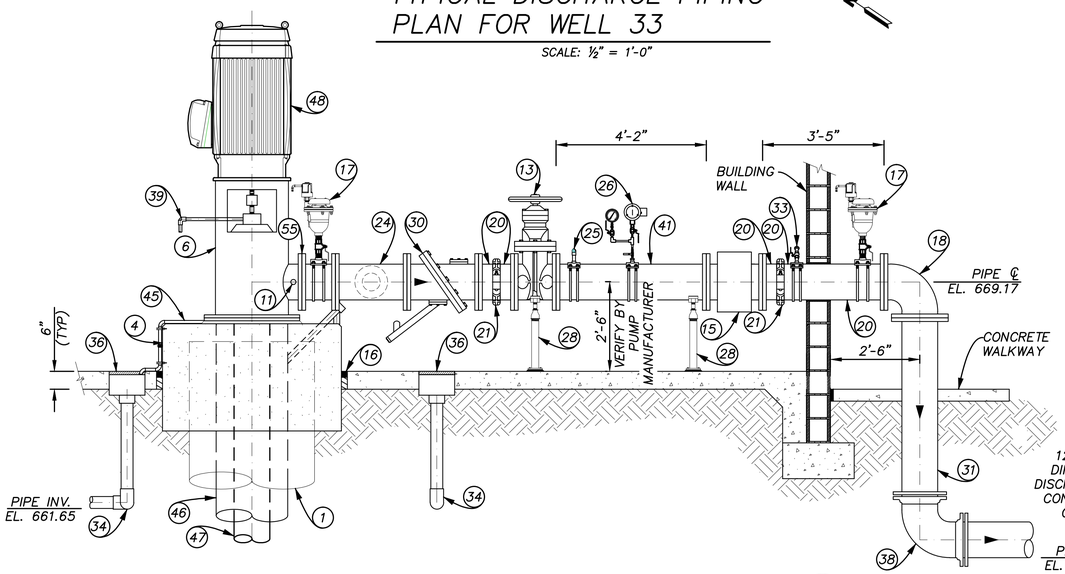
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
WELL PUMP MECHANICAL PLAN

Drawing No. 13-038U
M-1
Sht. 6 of 21



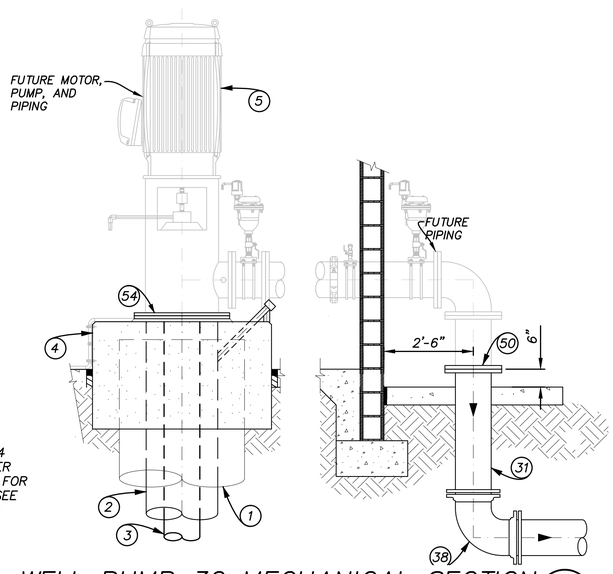
TYPICAL DISCHARGE PIPING PLAN FOR WELL 33

SCALE: ½" = 1'-0"



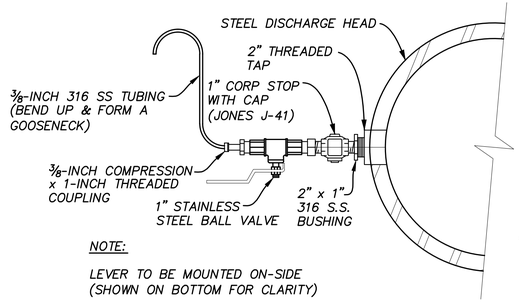
WELL PUMP 33 MECHANICAL SECTION (A / --)

SCALE: ½" = 1'-0"



WELL PUMP 32 MECHANICAL SECTION (C / M-1)

SCALE: ½" = 1'-0"

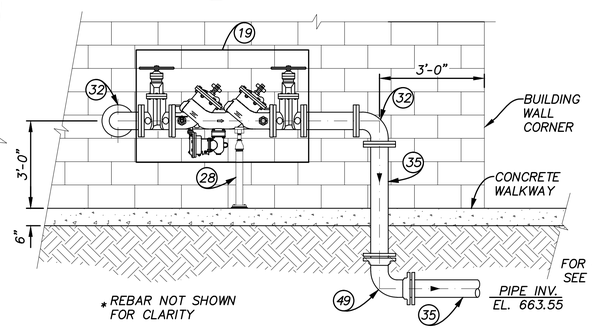


NOTE:

LEVER TO BE MOUNTED ON-SIDE
(SHOWN ON BOTTOM FOR CLARITY)

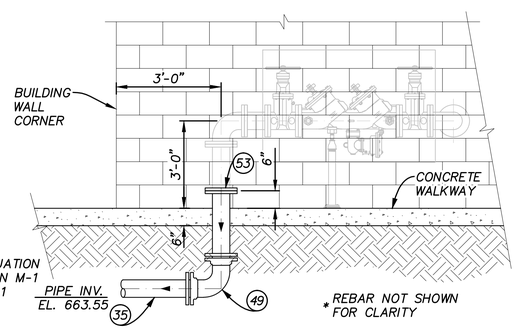
1-INCH TAP DETAIL (1 / M-1)

NOT TO SCALE



WELL 33 PUMP-TO-WASTE PIPING SECTION (B / M-1)

SCALE: ½" = 1'-0"



WELL 32 PUMP-TO-WASTE PIPING SECTION (D / M-1)

SCALE: ½" = 1'-0"

SHEET NOTES:

1. ALL BELOW GRADE DUCTILE IRON PIPING, FITTINGS, VALVES, ETC. UNLESS OTHERWISE INDICATED OR SHOWN SHALL HAVE RESTRAINED MECHANICAL JOINTS ("MEGA-LUG" TYPE OR EQUAL FOR FITTING CONNECTIONS AND LOCKING STYLE GASKETS FOR PIPE CONNECTIONS), AND DOUBLE-WRAP IN BLUE COLORED 8-MIL POLYETHYLENE SLEEVE.
2. PROVIDE ALL EQUIPMENTS, PIPING, VALVES, AND FITTINGS ACCORDING TO THE CITY'S APPROVED LIST OF MATERIALS.
3. WRAP PVC VENT TERMINALS WITH 316 S.S. INSECT SCREEN AND 316 S.S. HOSE CLAMPS.
4. ROUTE 1-INCH 316 S.S. TUBING TO A POINT 6-INCH ABOVE FLOOR DRAIN. SEE DETAIL 6 ON DRAWING M-3 FOR PIPE SUPPORT.
5. INSTALL LEVEL TRANSDUCER, BREATHER BOX AND APPURTENANCES AS PER MANUFACTURER'S RECOMMENDATIONS.
6. PITOT TEST CONNECTION SHALL BE INSTALLED IN 45 DEGREE ANGLE.
7. PIPING SHOWN AS SCREENED (WELL 32) SHALL BE INSTALLED IN THE FUTURE AND IS FOR REFERENCE ONLY.

	LIST OF MATERIALS	SIZE	QTY
1	CONDUCTOR CASING (INSTALLED BY OTHERS CUT TO LENGTH)	34"	-
2	WELL 32 CASING (INSTALLED BY OTHERS CUT TO LENGTH)	16"	-
3	FUTURE WELL 32 PUMP, COLUMN AND SHAFTING (SEE SPECS FOR MFG., MODEL, STAGES). PROVIDE 8" COLUMN PIPE (SS 316L), AND SET PUMP INTAKE AT 248' AMSL.	200 GPM @ 588-FT	N.I.C.
4	WELLS PUMP BLOCK PER DETAIL 1 ON M-3	-	2
5	FUTURE WELL 32 TEFC INVERTER DUTY MOTOR	60 HP	N.I.C.
6	FABRICATED STEEL DISCHARGE HEAD	PER PUMP SUPPLIER	1
7	316 S.S. SCH 40 THREADED PIPE CASING VENT. PER DETAIL 5, DWG M-3	2"	2
8	THREADED CAP & VIATRAN LEVEL TRANSDUCER	2"	2
11	SAMPLE TAP PER DETAIL 1	-	1
12	RESILIENT WEDGE GATE VALVE WITH HAND WHEEL	6"	1
13	RESILIENT WEDGE GATE VALVE WITH HAND WHEEL	12"	1
14	316 S.S. TUBING FROM CONTROL VALVE PER SHEET NOTE 4	¾"	AS REQ'D
15	MAGNETIC FLOW METER W/ GROUNDING RINGS (SEE E-6)	12"	1
16	EXPANSION JOINT & NSF 61 SEALANT	½"	AS REQ'D
17	WELL SERVICE AIR/VAC A.R.I. MODEL D-060-C-HFNS PER DETAIL 4 ON M-3	2"	2
18	DUCTILE IRON 90° ELBOW (FLG x FLG)	12"	1
19	REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER DEVICE W/ NRS GATE VALVES AND STRAINER, FEBCO LF860	6"	1
20	THICKNESS CL 54 DUCTILE IRON SPOOL (FLG x GROOVE)	12"	AS REQ'D
21	STYLE 31 VICTAULIC COUPLING	12"	2
22	STYLE 31 VICTAULIC COUPLING	6"	1
23	THICKNESS CL 54 DUCTILE IRON PIPE SPOOL (FLG x GROOVE)	6"	AS REQ'D
24	DUCTILE IRON REDUCING TEE	12" x 6"	1
25	DOUBLE STRAP SADDLE TAP W/1" S.S. BALL VALVE AND 316 S.S. PIPE ROUTED TO CONTROL VALVE	1"	1
26	PRESSURE TRANSMITTER AND GAUGE ASSEMBLY PER DETAIL 3 ON M-3	-	1
27	DOUBLE STRAP SADDLE TAP W/ NIPPLE, BALL VALVE, AND PLUG	1"	1
28	ADJUSTABLE PIPE SUPPORT PER CITY OF CORONA STD. DWG. 418	-	4
29	CLA-VAL DEEP WELL PUMP CONTROL VALVE, EPOXY COATED INSIDE & OUT W/ X101C VALVE POSITION INDICATOR, AND 316 S.S. TRIM & TUBING	6"	1
30	SLANTING DISC BOTTOM MOUNTED DASHPOT CHECK VALVE W/ LIMIT SWITCH (APCO SERIES 800T W/ SIGNAL SWITCH)	12"	1
31	THICKNESS CL 54 DUCTILE IRON PIPE SPOOL (FLG x PE)	12"	AS REQ'D
32	DUCTILE IRON 90° ELBOW (FLG x FLG)	6"	2
33	DOUBLE STRAP BRONZE SADDLE W/ NIPPLE, BALL VALVE, AND PLUG FOR PITOT TEST. SEE SHEET NOTE 6.	2"	1
34	SDR 35 PVC PIPE AND FITTINGS	4"	AS REQ'D
35	DUCTILE IRON CL350 PIPE AND FITTINGS	6"	AS REQ'D
36	FLOOR SINK (ZURN Z-1901 WITH S.S. FRAME, ¾ S.S. GRATE AND SEDIMENT BUCKET, OR EQUAL)	12" x 12" x 8"	4
38	DUCTILE IRON 90° ELBOW (MJ x MJ)	12"	2
39	PRE-LUBE LINE (TYPE K HARD COPPER)	1"	AS REQ'D
41	THICKNESS CL 54 DUCTILE IRON PIPE SPOOL (FLG x FLG)	12"	AS REQ'D
44	NOT USED	-	-
45	316 S.S. SWAGE LOCK TUBING AND FITTINGS	1"	AS REQ'D
46	WELL 33 CASING (INSTALLED BY OTHERS CUT TO LENGTH)	16"	-
47	WELL 33 PUMP, COLUMN AND SHAFTING (SEE SPECS FOR MFG., MODEL, STAGES). PROVIDE 10" COLUMN PIPE (SS 316L), AND SET PUMP INTAKE AT 410' AMSL.	1500 GPM @ 438-FT	1
48	WELL 33 TEFC INVERTER DUTY MOTOR	250 HP	1
49	DUCTILE IRON 90° ELBOW (MJ x MJ)	6"	2
50	DUCTILE IRON BLIND FLANGE	12"	1
51	GRAVEL FEED LINE	3"	-
52	SOUNDING TUBE	1"	-
53	DUCTILE IRON BLIND FLANGE	6"	1
54	DUCTILE IRON BLIND FLANGE	16"	1
55	INSULATING FLANGE GASKET	12"	1

* N.I.C. = NOT IN CONTRACT

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Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date | By | REVISIONS | App'd

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553 WALD
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Engineering _____
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Department of Water and Power Approval
By _____ 8/4/2017
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District Engineer
R.C.E. No. 41610

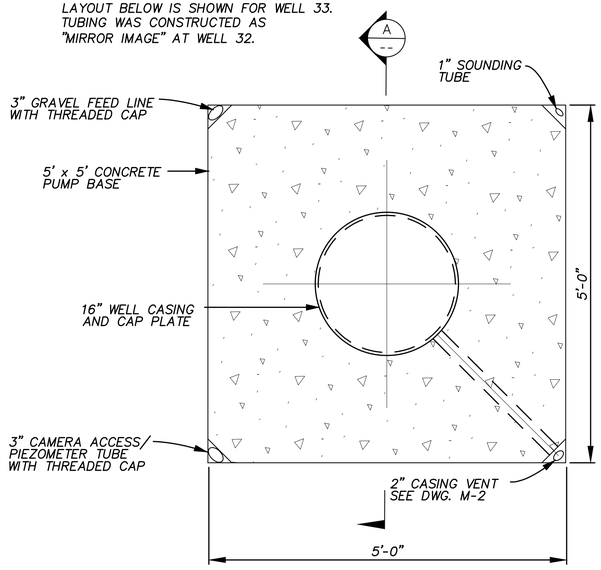
REGISTERED PROFESSIONAL ENGINEER — GARY J. HOBSON — 40779 — Exp. 3/31/19 — CIVIL — STATE OF CALIFORNIA

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
WELL PUMP MECHANICAL SECTIONS

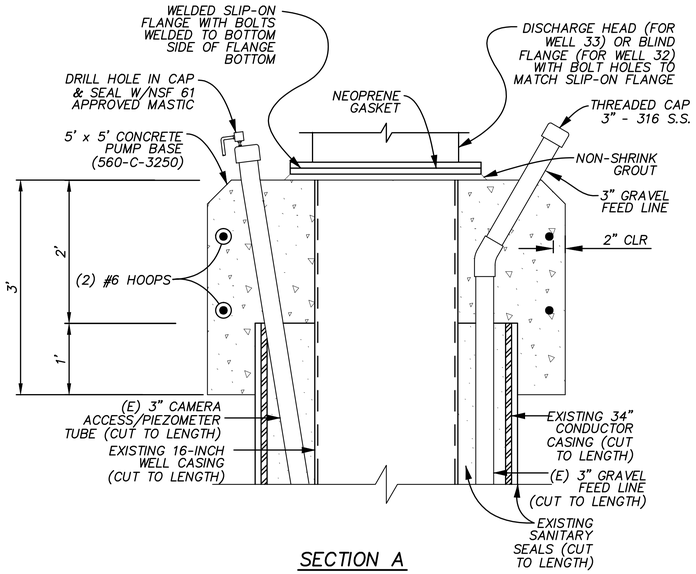
Drawing No. 13-038U
M-2
Sht. 7 of 21

NOTE:

LAYOUT BELOW IS SHOWN FOR WELL 33. TUBING WAS CONSTRUCTED AS "MIRROR IMAGE" AT WELL 32.



PLAN



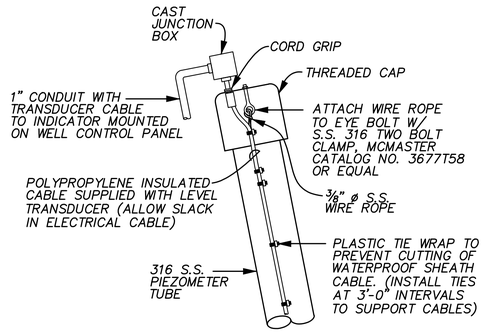
SECTION A

NOTE:

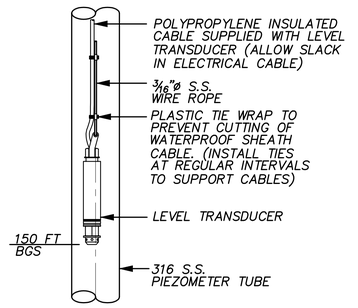
CONTRACTOR TO CUT (E) CONDUCTOR CASING, GRAVEL FILL, CAMERA ACCESS/PIEZOMETER TUBE, SOUNDING TUBE, & WELL CASING TO LENGTH AND EXTEND TO TOP OF PUMP BASE AS SHOWN.

WELL HEAD APPURTENANCES AND FOUNDATION 1/C-1

SCALE: 1" = 1'-0"



MOUNTING DETAIL

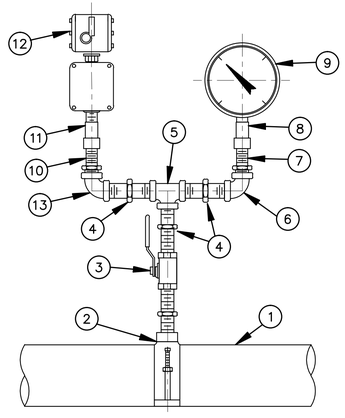


TRANSMITTER DETAIL

NOTE: POLYPROPYLENE INSULATED CABLE SUPPLIED WITH LEVEL TRANSDUCER (ALLOW SLACK IN ELECTRICAL CABLE)

CAMERA ACCESS/ PIEZOMETER DETAIL 2/-

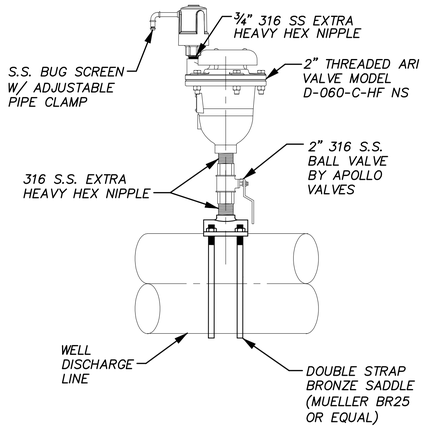
NOT TO SCALE



1. 12" DI WELL DISCHARGE PIPE
2. 1" SADDLE TAP, TYPE 316SS, DOUBLE STRAP
3. ¾" BALL VALVE, TYPE 316SS, FIPT
4. ¾" EXTRA HEAVY HEX HEAD PIPE NIPPLE, TYPE 316SS
5. 1" x ¾" TEE, TYPE 316SS, FIPT
6. ¾" 90° ELBOW, TYPE 316SS, W/ ¾" x ¼" BUSHING, TYPE 316SS
7. ¼" EXTRA HEAVY HEX HEAD PIPE NIPPLE, TYPE 316SS
8. ¼" PRESSURE SNUBBER, TYPE 316SS, WEKSLER INSTRUMENT TYPE BW42, NOSHOK MOD. 5025
9. 4" LIQUID FILLED PRESSURE GAUGE, 0-300 PSI, ASHCROFT TYPE 1008S, STAINLESS STEEL
10. ½" EXTRA HEAVY HEX HEAD PIPE NIPPLE, TYPE 316SS
11. ½" PRESSURE SNUBBER, TYPE 316SS, OMEGA MOD. PS-4E, NOSHOK MOD. 5050
12. PRESSURE TRANSDUCER, 0-300 PSI, ENDRESS+HAUSER CERABAR SPMC71
13. ¾" 90° ELBOW, TYPE 316SS, W/ ¾" x ½" BUSHING, TYPE 316SS

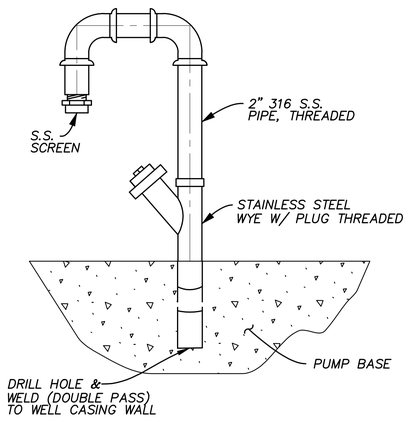
PRESSURE TRANSMITTER AND GAUGE DETAIL 3/-

NOT TO SCALE



TYPICAL ARV ASSEMBLY 4/-

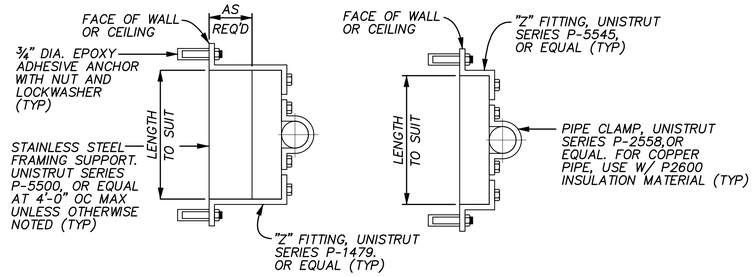
NOT TO SCALE



* ALL FITTINGS SHALL BE 316 S.S.

WELL VENT DETAIL 5/-

NOT TO SCALE



NOTES:

1. USE THIS DETAIL FOR PIPES 3-INCHES AND SMALLER IN DIAMETER.
2. ALL MATERIALS SHALL BE 316 STAINLESS STEEL

EXTENDED MOUNT FLUSH MOUNT

PIPE SUPPORT FOR INDIVIDUAL PIPES 6/-

NOT TO SCALE

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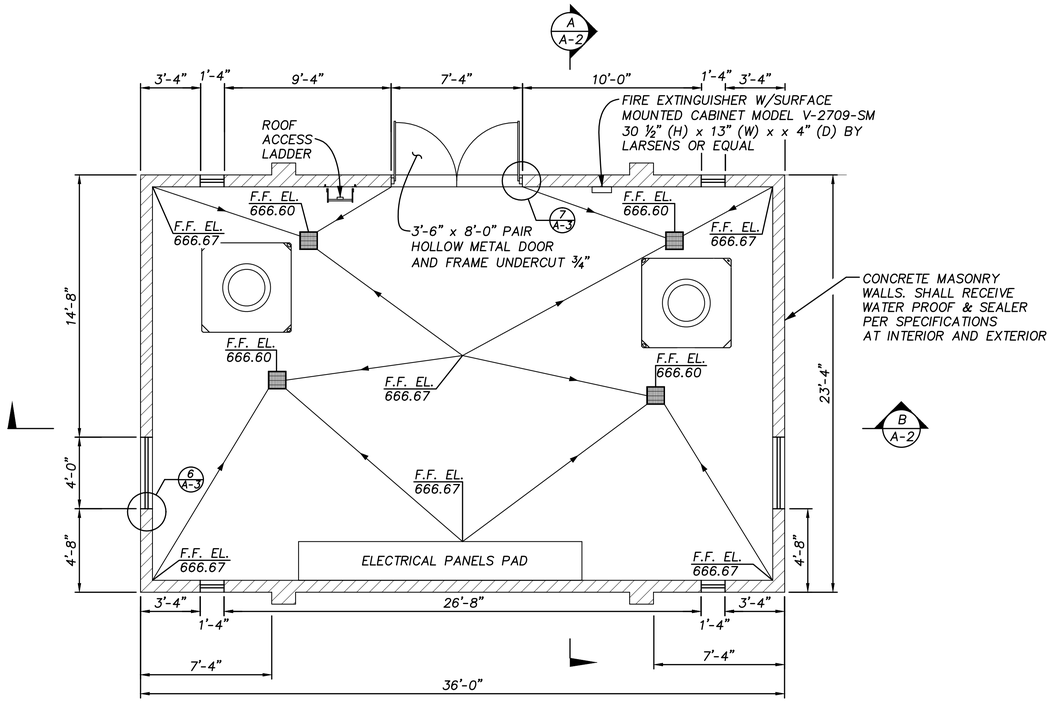
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
MECHANICAL DETAILS

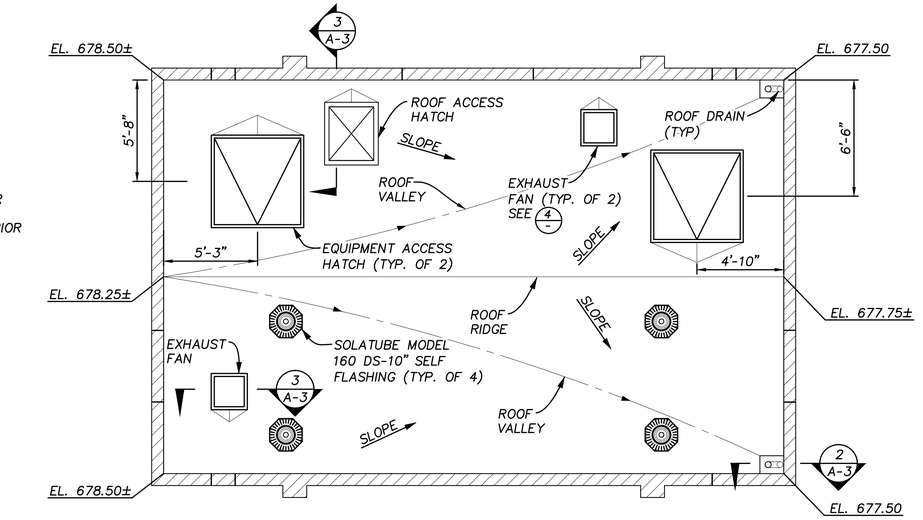
Drawing No. 13-038U
M-3
Sht. 8 of 21

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA



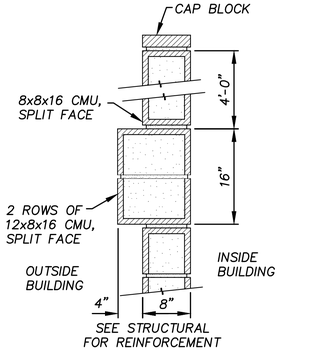
BUILDING FLOOR PLAN

SCALE: ¼" = 1'-0"



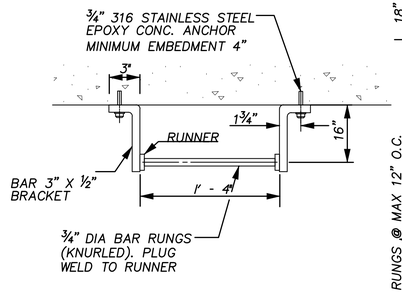
BUILDING ROOF PLAN

SCALE: ¼ " = 1'-0"



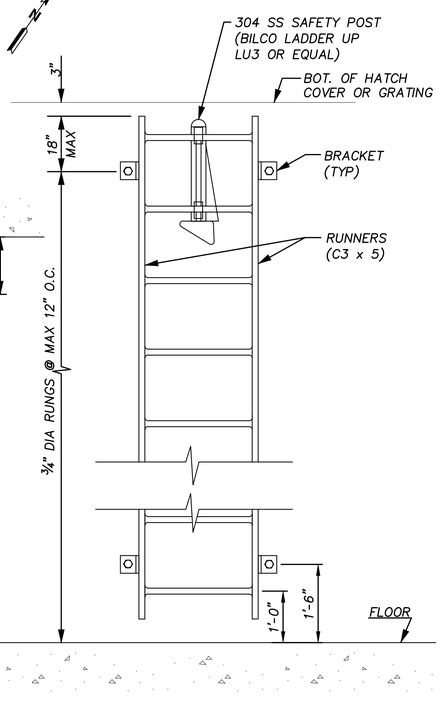
RIBBON DETAIL 1/-

NOT TO SCALE



PLAN VIEW

NOTE: ALL LADDER COMPONENTS SHALL BE 316 STAINLESS STEEL, UNLESS OTHERWISE SHOWN



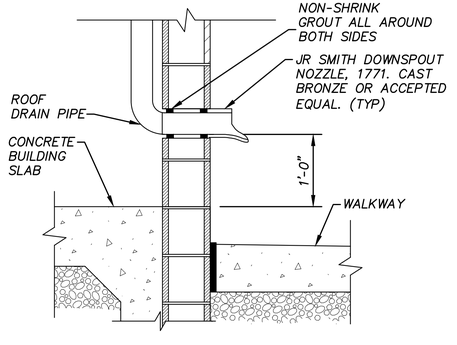
STEEL LADDER DETAIL 2/-

NOT TO SCALE

FAN SCHEDULE		
FAN TYPE	DAMPER SIZE	ROOF OPENING
GREENHECK CUBE 240	24" x 24"	26½" x 26½"

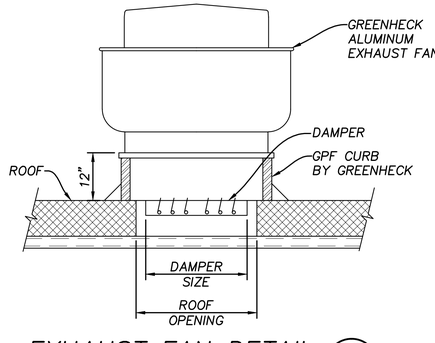
NOTES:

1. FANS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. PROVIDE AND INSTALL ALUMINUM BIRD SCREEN FOR FAN DISCHARGE PROTECTION.
3. PROVIDE AND INSTALL RUBBER SEAL BETWEEN FAN AND ROOF CURB.



ROOF DRAIN DETAIL SECTION 3/-

SCALE: 1" = 1'-0"



EXHAUST FAN DETAIL 4/--

NOT TO SCALE

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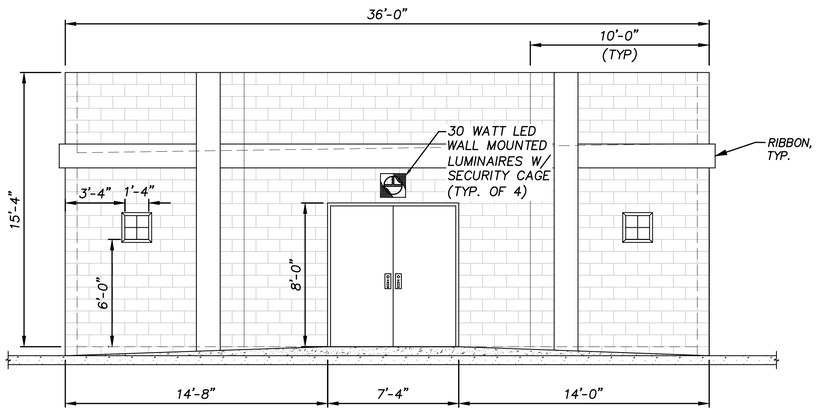
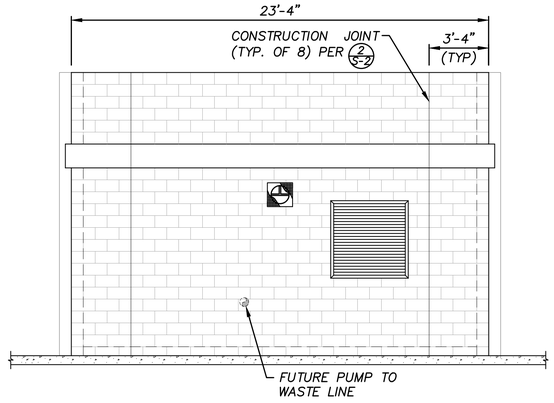
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
FLOOR AND ROOF PLANS

Drawing No. 13-038U
A-1
Sht. 9 of 21

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON Exp. 3/31/19 CIVIL STATE OF CALIFORNIA



NORTH ELEVATION
SCALE: ¼" = 1'-0"



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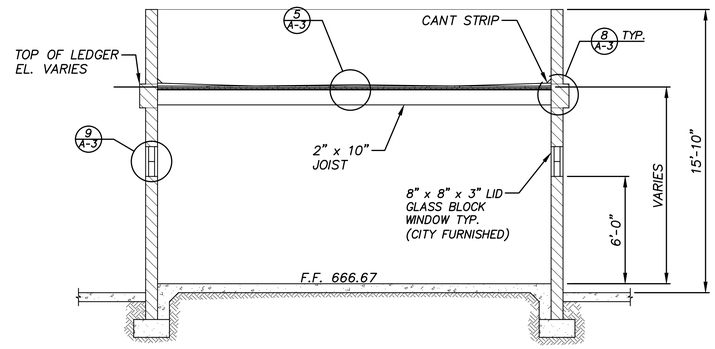

SECTION A / A-1
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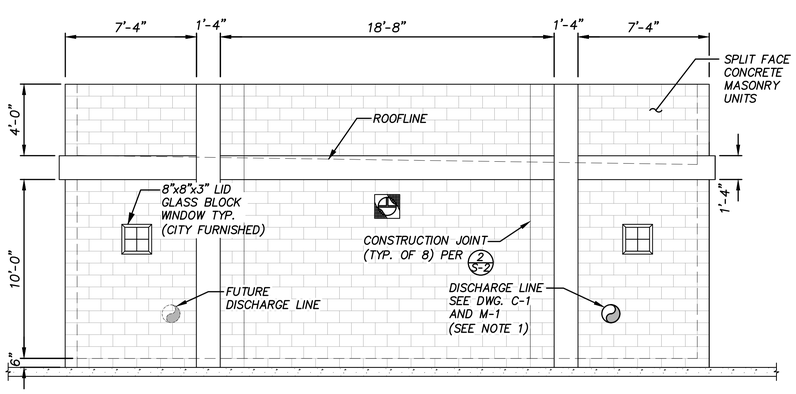
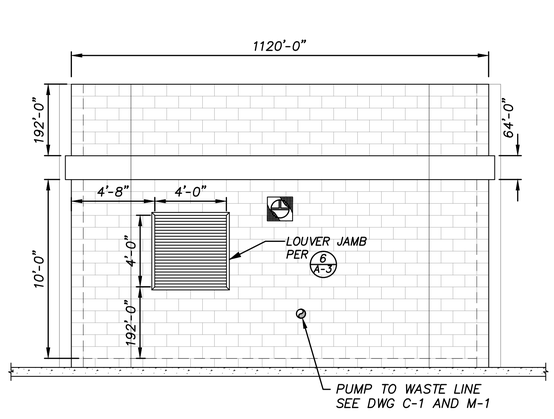
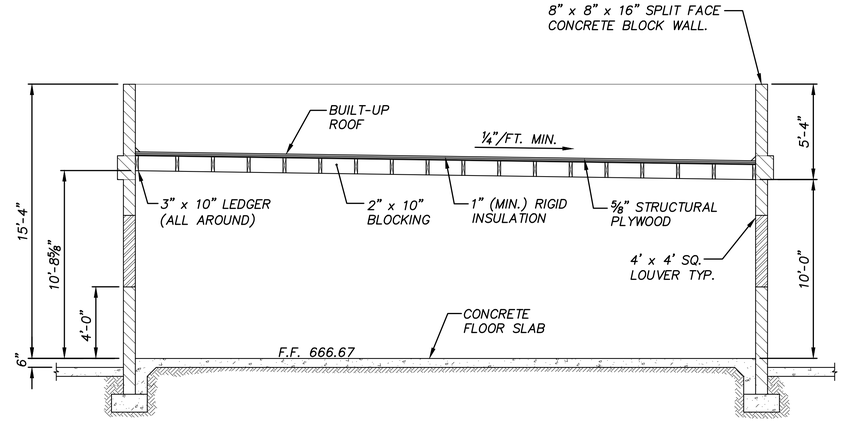


SOUTH ELEVATION
SCALE: ¼" = 1'-0"



EAST ELEVATION
SCALE: ¼" = 1'-0"



SECTION B / A-1
SCALE: ¼" = 1'-0"

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SHEET NOTES:

1. PIPE AND WALL PENETRATION PER DETAIL 2 ON SHEET M-1.
2. BALLISTIC GRADE GLASS BLOCK CITY FURNISHED.
3. DOOR SHALL BE EQUIPPED WITH AN INTERIOR PANIC BAR, SEE SPECIFICATION SECTION 08710.
4. LINTELS PER DETAIL 8 ON DRAWING S-3.
5. PROVIDE AND INSTALL WIRE CAGE PROTECTION BY CHASE SECURITY SYSTEMS OR EQUAL FOR ALL EXTERIOR LIGHTS.

REGISTERED PROFESSIONAL ENGINEER
GARY J. HOBSON
No. 40779
Exp. 3/31/19
CIVIL
STATE OF CALIFORNIA

0 ½ 1 — 24x36 FORMAT. IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 ¼ ½ — 12x18 FORMAT. WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

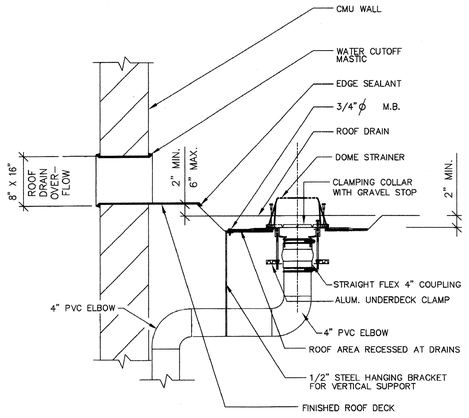
AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By Vernon R. Weisman, P.E. 8/4/2017
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
BUILDING ELEVATIONS AND SECTIONS

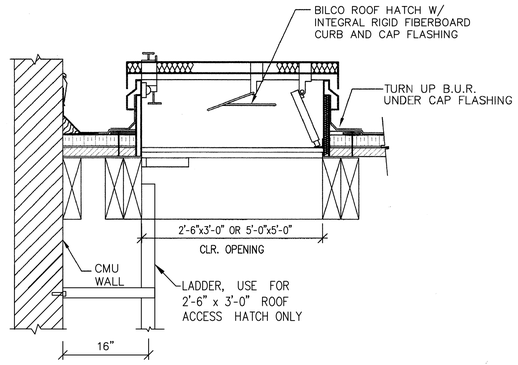
Drawing No. 13-038U
A-2
Sht. 10 of 21



4" ROOF DRAIN AND SCUPPER (2 / A-1)

SCALE : N.T.S.

HATCH SCHEDULE			
HATCH	QUANTITY	SIZE	TYPE
ROOF/LADDER ACCESS	1	2'-6" x 3'-0"	TYPE "S", SINGLE LEAF, ALUMINUM
EQUIPMENT ACCESS	2	5'-0" x 5'-0"	TYPE "F", SINGLE LEAF, ALUMINUM

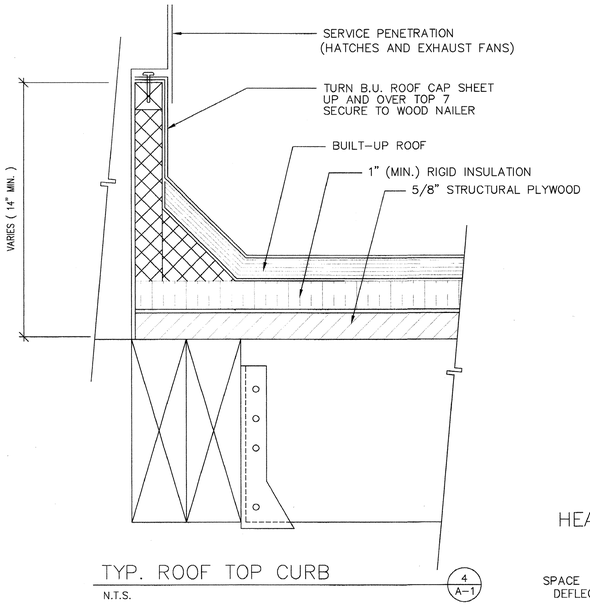


TYPICAL ROOF HATCH (3 / A-1)

N.T.S.

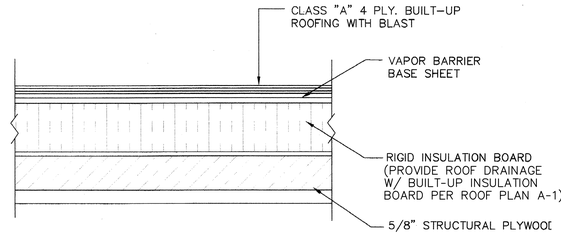
NOTE:

GENERAL CONTRACTOR TO COORDINATE BETWEEN CURB MANUFACTURER/ INSTALLER & EQUIPMENT MANUFACTURER/INSTALLER FOR EXACT OPENING SIZES, UNIT CONFIGURATIONS AND LOCATION OF ADDITIONAL INSULATION.



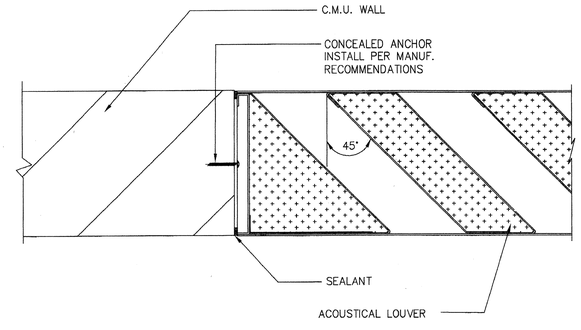
TYP. ROOF TOP CURB (4 / A-1)

N.T.S.



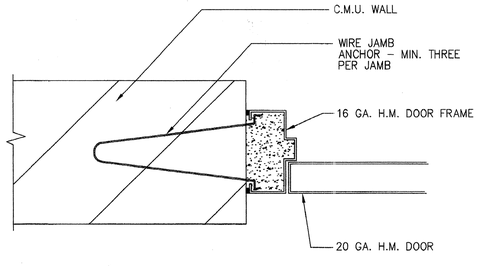
ROOF ASSEMBLY (5 / A-1) (5 / A-2)

N.T.S.



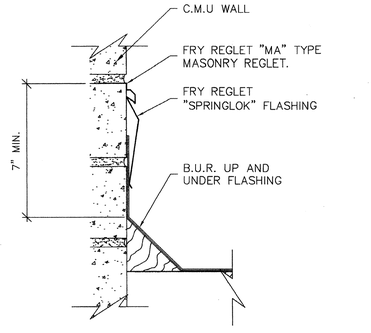
LOUVER JAMB (6 / A-1) (6 / A-2)

SCALE : 3" = 1'-0"



DOOR JAMB (7 / A-1)

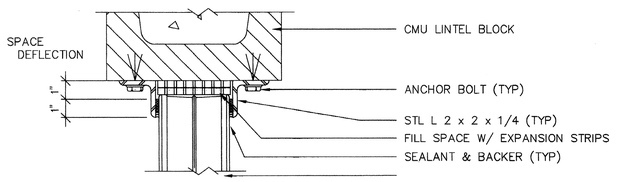
SCALE : 3" = 1'-0"



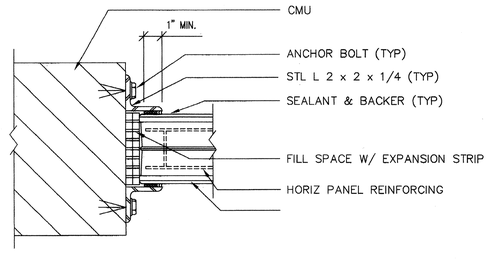
FLASHING (8 / A-2)

SCALE : 3" = 1'-0"

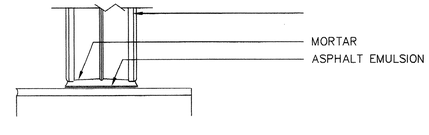
HEAD



JAMB



SILL



GLASS BLOCK (9 / A-1) (9 / A-2)

SCALE : 3" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON No. 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

0 1/2 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 1/4 1/2 — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
ARCHITECTURAL DETAILS

Drawing No. 13-038U
A-3
Sht. 11 of 21

STRUCTURAL NOTES

GENERAL

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SHOP DRAWINGS AND THE PROJECT SPECIFICATIONS.
2. CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF CALIFORNIA BUILDING CODE (CBC) THE CBC SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THESE DOCUMENTS ARE MORE RESTRICTIVE.
3. NOTHING SHOWN OR OMITTED FROM THESE DOCUMENTS SHALL RELIEVE THE CONTRACTOR FROM FULL COMPLIANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
4. THE CONTRACTOR ALONE IS RESPONSIBLE FOR JOB SITE SAFETY. SITE REVIEW OF THE CONSTRUCTION BY THE ENGINEER IS TO DETERMINE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. IT DOES NOT ENCOMPASS SAFETY PROCEDURES OR OPERATIONS.
5. WITHOUT EXCLUSION OF ANY REFERENCE IN THE CONSTRUCTION DOCUMENTS TO ANY RULE OR REGULATION, THE ENGINEER IS NOT ASSUMING ANY PROVISIONS OF SUPERVISION OF CONSTRUCTION METHODS OR PROCESSES.
6. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, BRACING OR SHORING SHALL SUPPORT STRUCTURES WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. BRACING AND SHORING REQUIREMENTS SHALL BE ACCEPTABLE TO THE ENGINEER.
7. SEE ALL OTHER PROJECT DOCUMENTS FOR REGLETS, PIPE SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED OR PASSED THROUGH THE CONCRETE.
8. PENETRATIONS THROUGH WALLS OR SLABS LESS THAN 12 INCHES IN DIAMETER MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ASSOCIATED DRAWINGS FOR LOCATIONS.
9. THE MINIMUM CLEAR DISTANCE BETWEEN PIPE PENETRATIONS SHALL BE 3 TIMES THE DIAMETER OF THE PENETRATION OR 8 INCHES, WHICHEVER IS SMALLER.
10. WRITTEN DIMENSIONS SHALL BE USED FOR CONSTRUCTION. DO NOT SCALE DRAWINGS.
11. STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL AND/OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
12. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND EMBEDMENTS NOT SHOWN ON THE DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO PLACING CONCRETE.
13. CONDUITS OR PIPING SHALL NOT BE PLACED IN THE PLANE OF CONCRETE WALLS, SLABS OR ROOFS.
14. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR. SHOULD CONFLICTS OR INTERFERENCE OCCUR, THEY SHALL BE RESOLVED WITH THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER. EXISTING FIELD CONDITIONS AT VARIANCE WITH THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ANY FURTHER WORK IS PERFORMED.
15. USE PERTINENT STANDARD DETAILS SHOWN, EVEN THOUGH THEY MAY NOT BE CALLED OUT AT LOCATIONS WHERE THEY APPLY.
16. CONDITIONS NOT SPECIFICALLY SHOWN OR INDICATED SHALL BE CONSTRUCTED SIMILAR TO DETAILS SHOWN FOR THE RESPECTIVE MATERIALS OR CONDITIONS.

SITE WORK

1. ALL FOOTINGS SHALL BE FOUNDED A MINIMUM OF 24-INCHES BELOW THE LOWEST ADJACENT FINISH GRADE.
2. EXCAVATION FOR FOUNDATIONS, TRENCHES, FOOTINGS, FLOOR SLABS, CONCRETE WALKS, CURBS AS SHOWN ON THE DRAWINGS. THE BOTTOMS OF ALL EXCAVATIONS SHALL BE LEVEL, TAMPED FIRM, CLEAN AND FREE FROM ALL DEBRIS OR FOREIGN MATTER.
3. WHERE PRACTICABLE, SIDES OF FOOTINGS SHALL BE CUT NEAT AND CONCRETE POURED DIRECTLY AGAINST THE EXCAVATION. IF FORMING IS REQUIRED, THE TRENCHES SHALL BE EXCAVATED WIDE ENOUGH TO PERMIT THE ERECTION AND REMOVAL OF FORMS.
4. PROVIDE ENGINEERING FILL BELOW FOOTING AND FLOOR SLAB. ENGINEERING FILL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT RELATIVE COMPACTION AS DETERMINED BY ASTM TEST METHOD D1507.

SPECIAL INSPECTION

1. UNLESS MODIFIED BY THIS NOTE, SPECIAL INSPECTION SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN CHAPTER 17 OF THE CBC. THE FOLLOWING ITEMS, AS A MINIMUM, SHALL RECEIVE SPECIAL INSPECTION:

   a) BOLTS INSTALLED IN CONCRETE SHALL BE INSPECTED PRIOR TO AND DURING CONCRETE PLACEMENT.

   b) ADHESIVE ANCHOR SYSTEMS - THE INSPECTOR SHALL RECORD DRILL BIT COMPLIANCE WITH ANSI b94.12-1977. HOLE DEPTH AND CLEANLINESS, PRODUCT DATA AND VERIFICATION OF ANCHOR INSTALLATION WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS AND ESR EVALUATIONS REPORT.

   c) CONCRETE - THE INSPECTOR SHALL SUPERVISE THE PREPARATION OF COMPRESSION TEST SPECIMENS, SLUMP TEST, AND BE PRESENT DURING PLACEMENT OF REINFORCED CONCRETE.

   d) REINFORCING STEEL - THE INSPECTOR SHALL INSPECT THE REINFORCING STEEL SIZES, LOCATION AND SPACING PRIOR TO CLOSING THE FORMS OR DELIVERY OF CONCRETE TO JOBSITE.

   e) WELDING- THE INSPECTOR SHALL INSPECT ALL STRUCTURAL WELDING DONE IN THE FIELD IN ACCORDANCE WITH SECTION 1704.3 OF CBC

SPECIAL INSPECTION

1. NO SOILS REPORT HAS BEEN PREPARED EXPRESSLY FOR THIS PROJECT. DESIGN VALUES ARE BASED ON CBC TABLE 1806.2.
2. BEFORE BEGINNING FOUNDATION EXCAVATION POTHOLE AND LOCATE ALL BURIED PIPING AND CONDUIT WHOSE PRESENCE:
   A. IDENTIFIED BY UNDERGROUND SERVICE ALERT STAKING.
   B. SHOWN ON PLANS OR
   C. IS EVIDENT FROM MANHOLES, BOXES, PAVEMENT CUTS, STUBUPS, OR OTHER VISIBLE SURFACE FEATURES.
3. IN THE EVENT FOUNDATION EXCAVATION IS CARRIED TO A DEPTH GREATER THAN REQUIRED, THE OVEREXCAVATION SHALL BE BACKFILLED WITH THE SAME CONCRETE AS USED FOR THE FOOTING AT NO ADDITIONAL EXPENSE TO THE OWNER. DO NOT PLACE UNCONTROLLED FILL.
4. KEEP FOUNDATION EXCAVATION CLEAR OF LOOSE MATERIAL AND STANDING WATER.
5. UNLESS OTHERWISE NOTED, COMPACT BACKFILL FOR FOUNDATIONS AND IN UTILITY TRENCHES TO AT LEAST 95% OF MAXIMUM DENSITY PER ASTM D1557.
6. SUBMIT COMPACTION REPORT TO BE APPROVED BY OWNER'S REPRESENTATIVE BEFORE PLACING ANY CONCRETE OR FILL.
7. SLOPE FINISH GRADES TO DRAIN AWAY FROM BUILDINGS.

CONCRETE

1. CONCRETE : ASTM C94, READY MIXED CONCRETE.
2. CEMENT : ASTM C150, TYPE II OR V (PORTLAND CEMENT)
3. AGGREGATES: ASTM C33 (NORMAL WEIGHT)
4. ADMIXTURES: ASTM C260, AIR ENTRAINMENT
   ASTM C618, POZZOLANS
5. NO ADMIXTURES CONTAINING CHLORIDE SALTS PERMITTED.

APPL. DESIGN:	MIN STRENGTH @ 28 DAYS	W/C RATIO	SLUMP
STRUCTURAL CONCRETE	4000 PSI	0.45	4"
NON-STRUCTURAL	2500 PSI	0.45	4"

6. FLY ASH IS NOT ALLOWED.
7. MEASURE, MIX, TRANSPORT AND PLACE CONCRETE IN ACCORDANCE WITH ACI 304. CONFORM TO THE REQUIREMENTS OF ACI 301.
   MAX TEMPERATURE IN MIXER: 90 DEGREES F.
   MAX. TIME IN MIXER: 1½HRS.
   CURING: PER ACI 308.
   TESTING: PER ASTM C39, ASTM C143
8. SPACE CONTRACTION JOINTS AND CONSTRUCTION JOINTS FOR SLABS ON GRADE 15 FEET MAXIMUM IN EACH DIRECTION WITH MAXIMUM ASPECT RATIO OF 1.5 TO 1, U.N.O.
9. CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, ARE NOT PERMITTED WITHOUT APPROVAL BY ENGINEER.
10. SURFACES SHALL BE CLEAN AND FREE OF LAITANCE. PROVIDE 3/4" CHAMFERS AT EXPOSED CORNERS.
11. SURFACES CALLED OUT ON THE DRAWINGS AS "ROUGHENED" SHALL BE RAKED TO A FULL AMPLITUDE OF 1/4".
12. DRY PACK GROUT: HIGH STRENGTH, NON-SHRINK, METALLIC GROUT EQUIVALENT TO MASTER BUILDERS' EMBECO 636, APPLIED PER MANUFACTURER'S RECOMMENDATIONS.
13. FLOWABLE GROUT: HIGH STRENGTH, NON-SHRINK, NON-METALLIC GROUT EQUIVALENT TO MASTER BUILDER'S MASTERFLOW 713, WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI, APPLIED PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE REINFORCING

1. NEW BILLET STEEL (TYPE N OR S) PER ASTM A615, OR A706 GRADE 60.
2. WELDING: PER AWS D1.4. NO TACK WELDING OF REINFORCING BARS PERMITTED WITHOUT APPROVAL BY ENGINEER.
3. BAR EMBEDMENT: FOR DEVELOPMENT LENGTH OF STRAIGHT AND HOOKED BARS IN TENSION, PER ACI-318, U.N.O.
4. BAR LAP: CLASS B (CLASS A IF ALTERNATE SPLICES STAGGERED ONE LAP LENGTH, MIN.) PER ACI 318, U.N.O. SPLICED BARS IN BEAMS, SLABS AND FOOTINGS SHALL BE AT THE SAME LEVEL, U.N.O.
5. WELDED WIRE FABRIC: SMOOTH - PER ASTM A185, DEFORMED - PER ASTM A497.
6. DETAILING: ACI 315
   FABRICATION & PLACING: CRSI MANUAL OF STD. PRACTICE.
7. PROVIDE BENT CORNER BARS TO MATCH & LAP HORIZONTAL REINFORCEMENT AT CORNERS AND INTERSECTIONS OF WALLS, BEAMS AND FOOTINGS.
8. CONCRETE PROTECTION FOR REINFORCING:
   CONCRETE CAST AGAINST EARTH: 3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER 2"
   #5 AND SMALLER 2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLABS, WALLS, JOISTS 2 "
   BEAMS, COLUMNS: PRIMARY REINFORCEMENT,
   TIES, STIRRUPS, SPIRALS 2 "
9. REINFORCING IN CONCRETE PLACED AGAINST EARTH WITHOUT FORMS SHALL BE SUPPORTED BY CONCRETE BLOCK, APPROVED NON-METALLIC CHAIRS, OR ANOTHER METHOD APPROVED BY THE ENGINEER. SECURELY TIE ALL REINFORCING, INCLUDING DOWELS, PRIOR TO PLACING CONCRETE.

MASONRY

1. CONCRETE MASONRY UNITS: ASTM C90, GRADE N-1, NET AREA COMPRESSIVE STRENGTH 1900 PSI AT 28 DAYS.
2. MORTAR: ASTM C270, TYPE S, 1800 PSI AT 28 DAYS.
3. GROUT: ASTM C476 COMPRESSIVE STRENGTH 2000 PSI AT 28 DAYS WITH COARSE AGGREGATE, AND NOT LESS THAN A 6-⅓ SACK MIX. SLUMP 8"(+/-). NO FLY ASH OR ADMIXTURES CONTAINING CHLORIDES PERMITTED.
4. SPECIFIED COMPRESSIVE STRENGTH OF MASONRY, F'M = 1500 PSI. SPECIAL INSPECTION SHALL BE PROVIDED DURING MASONRY CONSTRUCTION.
5. LAY BLOCK IN RUNNING BOND.
6. COMPLETE GROUTING OF ANY SECTION OF WALL IN ONE DAY WITH NO INTERRUPTIONS GREATER THAN ONE HOUR.
7. GROUT BOND BEAMS, LINTELS AND REINFORCED CELLS. GROUT UNREINFORCED CELLS AS NOTED ON THE DRAWINGS. GROUT ALL CELLS SOLID IN MASONRY BELOW GRADE.
8. REINFORCE AND GROUT AROUND EMBEDDED ITEMS PER STRUCTURAL DRAWINGS. SECURE EMBEDDED STRUCTURAL ITEMS IN PROPER POSITION BEFORE GROUTING. EMBED ANCHOR BOLTS IN REINFORCED GROUTED CELLS.
9. HOLD GROUT 1"½" BELOW A MORTAR JOINT TO FORM A "GROUT KEY" WITH POUR ABOVE. WHERE BOND BEAMS OCCUR, STOP GROUT POUR A MINIMUM OF ½ INCH BELOW TOP OF MASONRY.
10. USE MECHANICAL VIBRATOR FOR GROUT POURS OVER 12 INCHES; GROUT POURS LESS THAN 12 INCHES MAY BE PUDDLED.
11. MAXIMUM GROUT LIFT= 5'-0".
12. HORIZONTAL GROUT STOP IN BOND BEAMS TO BE METAL LATH OR FIBERGLASS.
13. LINTELS: AS NOTED ON DRAWINGS. USE OPEN-ENDED BLOCKS FOR MASONRY LINTELS WITH SPANS GREATER THAN 6'-0".

MASONRY REINFORCING

1. BARS: NEW BILLET (TYPE N OR S) PER ASTM A615 OR A706, GRADE 60.
2. WELDING: AWS 1.4. NO WELDING OF GRADE 60 BARS IS PERMITTED WITHOUT PRIOR APPROVAL BY ENGINEER.
3. BAR LAP : 40 BAR DIAMETERS, U.N.O.
   FABRICATION: PER CRSI MANUAL OF STD. PRACTICE.
4. SECURE VERTICALS IN PROPER POSITION PRIOR TO GROUTING WITH WIRE POSITIONERS AT INTERVALS NOT EXCEEDING 200 BAR DIAMETERS NOR 10 FEET.
5. DETAILING: ACI 531, CHAPTER 8.
6. VERTICAL REINFORCEMENT: AS NOTED ON THE DRAWINGS AND A MINIMUM OF ONE #5 VERTICAL CONTINUOUS AT ALL WALL ENDS, CORNERS AND INTERSECTIONS, EACH SIDE OF OPENINGS AND CONTROL JOISTS AND AT 48" O.C. MAXIMUM SPACING ELSEWHERE. VERTICAL REINFORCEMENT WHICH IS INTERRUPTED BY POCKETS OR OPENINGS SHALL BE MADE CONTINUOUS EACH SIDE.
7. HORIZONTAL REINFORCEMENT: AS NOTED ON THE DRAWINGS AND A MINIMUM OF ONE #4 HORIZONTAL AT 48" O.C. MAXIMUM SPACING. USE TWO #4 CONTINUOUS IN BOND BEAMS, U.N.O.
8. BOND BEAM REINFORCING INTERRUPTED BY POCKETS OR OPENINGS SHALL BE MADE CONTINUOUS ABOVE AND BELOW.

CONCRETE ANCHORS

1. CAST-IN ANCHOR BOLTS SHALL CONFORM TO ASTM A307.
2. ADHESIVE ANCHORS SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND THE APPROPRIATE ICBO REPORTS. ANCHORS WITHOUT APPROPRIATE ICBO REPORTS SHALL NOT BE USED.
3. CONTRACTOR SHALL LOCATE EXISTING REBAR USING NON-DESTRUCTIVE METHODS PRIOR TO DRILLING HOLES FOR ADHESIVE ANCHORS. ADJUST SPACING OF ANCHORS TO MISS EXISTING REINFORCING. TOTAL NUMBER OF ANCHORS PROVIDED SHALL BE EQUAL TO WHAT IS SHOWN ON THE DRAWINGS.
4. ADHESIVE ANCHORS SHALL CONSIST OF A TWO-COMPONENT RESIN ADHESIVE. THE PACKAGES CONTAINING EACH COMPONENT SHALL BE ATTACHED TO A DISPENSING MANIFOLD. AN AUGER STYLE NOZZLE SHALL BE ATTACHED FOR PROPER MIXING OF THE ADHESIVE COMPONENTS. WHERE THREADED RODS ARE REQUIRED, RODS SHALL CONFORM TO ASTM A193 GRADE B7. WHERE SST IS CALLED FOR ON THE DRAWINGS, CONTRACTOR SHALL USE ALLOY GROUP 1 TYPE 304 CONDITION CW.

FINISHING, CURING AND PATCHING

1. AS SOON AS CONCRETE IN SLABS HAS SET SUFFICIENTLY TO BE WORKABLE, IT SHALL BE HAND FLOATED WITH A WOOD FLOAT. FINAL TROWELING OF THE INTERIOR SHALL BE DONE WITH A STEEL TROWEL EXCEPT WHERE DRAWINGS SPECIFICALLY CALL FOR OTHER TYPE OF FINISH. ALL EXTERIOR SLABS, SHALL BE GIVEN A LIGHT BROOM NON-SLIP FINISH UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. FINISHED SURFACES OF ALL SLABS AND PANELS SHALL BE TRUE AND FLAT IN ACCORDANCE WITH ELEVATIONS AND SLOPES SHOWN ON THE DRAWINGS. THE MAXIMUM VARIATION ALLOWED FROM THE SPECIFIED SLOPES AND SURFACES SHALL BE ⅛ INCH WITH NOT MORE THAN ⅛-INCH VARIATION IN ANY 10-FOOT LENGTH.
3. CONCRETE SLABS AND PANELS SHALL BE CURED BY MEANS OF AN APPROVED CURING COMPOUND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION.

STRUCTURAL AND MISCELLANEOUS STEEL

1. STRUCTURAL SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36.
2. MACHINE BOLTS (MB) SHALL CONFORM TO ASTM A307.
3. STEEL PIPE COLUMN SHALL CONFORM TO ASTM A53, GRADE B.
4. STEEL TUBE SHALL CONFORM TO ASTM A500, GRADE B.
5. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STRUCTURAL WELDING CODE OF THE AWS (D1.1) AND THE CALIFORNIA BUILDING CODE (1701). ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
6. ALL WELDING ELECTRODES SHALL CONFORM TO ASTM E70XX. ALL WELDING SHALL BE DONE WITH LOW HYDROGEN ELECTRODES OR USING A LOW HYDROGEN WELDING PROCESS.
7. ALL BOLT HOLES SHALL BE PUNCHED OR DRILLED (REAMED). BURNING OF HOLES IS NOT ACCEPTABLE.
8. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.
9. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION
10. THE DESIGN, FABRICATION, ERECTION AND QUALITY CONTROL OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC 360-05, AISC, MANUAL OF STEEL CONSTRUCTION, THIRTEEN EDITION AND CBC SECTION 2205.

STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION SHALL BE CONDUCTED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE, SECTION 1709.
2. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION AT THE CONSTRUCTION SITE OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR.
3. THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES SHALL RECEIVE STRUCTURAL OBSERVATION:

CONSTRUCTION STAGE	ELEMENTS/CONNECTIONS TO BE OBSERVED
a) FOUNDATION AND ROOF- CONCRETE	FOOTING REINFORCING STEEL AND DOWELS
b) BOLTS	ALL BOLTS INSTALLED IN CONCRETE
c) STEEL	REINFORCING STEEL
d) SOIL	SOIL COMPACTION TEST RESULT, BEARING VALVES

DESIGN CRITERIA

1. ROOF LIVE LOAD	20 psf
2. WIND DESIGN DATA	
BASIC WIND SPEED	110 mph (11.20 psf)
WIND EXPOSURE	B
3. EARTHQUAKE DESIGN DATA	
BUILDING CODE REFERENCE DOCUMENT	ASCE 7-10 STANDARD
LATITUDE	33.877941N
LONGITUDE	117.58142W
MAPPED Ss	1.614 G
MAPPED S1	0.691 G
SITE CLASS	D
SEISMIC DESIGN CATEGORY	D
SEISMIC FORCE-RESISTING SYSTEM	BEARING WALL SYSTEM SPECIAL REINFORCED MASONRY SHEER WALLS
SEISMIC RESPONSE COEF. Cs	0.3352
RESPONSE MODIFICATION COEFFICIENT	5
ANALYSIS PROCEDURE	EQUAVALENT LATERAL FORCE PROCEDURE
4. RISK CATEGORY	II
5. OCCUPANCY (PER CBC 2013)	U
6. IMPORTANCE FACTOR	1.0
7. SITE SOIL	D (1500 psf BA)

ABBREVIATIONS

DIA	DIAMETER	f'c	CONCRETE COMPRESSIVE STRENGTH	PJF	PREMOLDED JOINT FILLER
				PL	PLATE
AB	ANCHOR BOLT	f'm	MASONRY PRISM STRENGTH	PLYWD	PLYWOOD
ADDL	ADDITIONAL	FAB	FABRICATE (OR, ED)	PM	PRESSED METAL
AL	ALUMINUM	FD	FLOOR DRAIN	PRCST	PRECAST
ALT	ALTERNATE(ING)	FDN	FOUNDATION	PREFAB	PRE-FABRICATED
ANCH	ANCHOR	FHMS	FLATHEAD MACHINE SCREW	PT	POINT
APPROX	APPROXIMATE(LY)	FHWS	FLATHEAD WOOD SCREW	PREST	PRESSURE TREATED
ARND	AROUND	FIG	FIGURE	PVC	POLYVINYL CHLORIDE
		FIN	FINISH (ED)	PVMT	PAVEMENT
B TO B	BACK TO BACK	FL	FLOOR	R	RISER
BLDG	BUILDING	FLEX	FLEXIBLE	RAD	RADIUS
BLK	BLOCK(ING)	FRP	FIBERGLASS REINFORCED PLASTIC	RC	REINFORCED CONCRETE
BM	BEAM			RD	ROOF DRAIN
B.O.	BOTTOM OF	FTG	FOOTING	REF	REFERENCE / REFER
BOT	BOTTOM	FURN	FURNISHED	REINF	REINFORCE (D, ING)
BRG	BEARING			REQD	REQUIRED
BTWN	BETWEEN	GA	GAGE	REV	REVISION
C TO C	CENTER TO CENTER	GALV	GALVANIZED	RM	ROOM
CHKD	CHECKERED	GALVS	GALVANIZED STEEL	RO	ROUGH OPENING
CIRC	CIRCUMFERENTIAL	GEN	GENERAL	RT	RIGHT
CJ	CONSTRUCTION JOINT	GR	GUARD RAIL		
CL	CENTERLINE	GRTG	GRATING	SCHED	SCHEDULE
CLG	CEILING			SECT	SECTION
CLJ	CONTROL JOINT	H.A.S.	HEADED ANCHOR STUD	SHT	SHEET
CLKG	CAULKING	HDR	HEADER	SIM	SIMILAR
CLR	CLEAR	HDWD	HARDWOOD	SLNT	SEALANT
CMU	CONCRETE MASONRY UNIT	HDWR	HARDWARE	SMS	SHEET METAL SCREWS
COL	COLUMN	HGR	HANGER	SP	SPACE (S,ED)
CONC	CONCRETE	HGT	HEIGHT	SPEC	SPECIFICATION, SPECIFIED
CONN	CONNECTION	HM	HOLLOW METAL	SQ	SQUARE
CONST	CONSTRUCTION	HOR	HORIZONTAL	SST	STAINLESS STEEL
CONT	CONTINUOUS	HP	HIGH POINT	STAG	STAGGERED
CRS	COURSE(S)	HR	HANDRAIL	STD	STANDARD
CSK	COUNTERSINK			STIF	STIFFENER
CTR	CENTER (ED)	ID	INSIDE DIAMETER	STIR.	STIRRUP (S)
CW	COLD WORKED	I.F.	INSIDE FACE	STL	STEEL
		INFO	INFORMATION	STRUC	STRUCTURE (S,URAL)
D	DEEP, DEPTH	INT	INTERIOR	STWY	STAIRWAY
d	PENNY	INVT	INVERT	SYM	SYMMETRICAL
DEMO	DEMOLITION				
DET	DETAIL	JT	JOINT	T	TREAD (S)
DF	DOUGLAS FIR	JT FLR	JOINT FILLER	T&B	TOP AND BOTTOM
DIA	DIAMETER			T&G	TONGUE AND GROOVE
DIAG	DIAGONAL	LG	LONG	TD	TRENCH DRAIN
DIM	DIMENSION	LLH	LONG LEG HORIZONTAL	THD	THREADED
DL	DEAD LOAD	LLV	LONG LEG VERTICAL	THK	THICK (NESS)
DN	DOWN	LNTL	LINTEL	TJ	TOOLED JOINT
DO.	DITTO	LONG.	LONGITUDINAL	T.O.	TOP OF
DP	DAMPROOFING	LP	LOW POINT	TOC	TOP OF CONCRETE
DR	DRAIN	LT	LEFT	TOS	TOP OF STEEL
DWG(S)	DRAWING(S)	LW	LIGHTWEIGHT	T.O.W.	TOP OF WALL
DWL(S)	DOWEL(S)			TPER	THERMOPLASTIC ELASTOMERIC RUBBER
		MAS	MASONRY		
EA	EACH	MATL	MATERIAL	TRNSV	TRANSVERSE
EB	EXPANSION BOLT	MAX	MAXIMUM	TYP	TYPICAL
ECC	ECCENTRIC	MB	MACHINE BOLT		
ED	EQUIPMENT DRAIN	MCJ	MASONRY CONTROL JOINT	UNO	UNLESS NOTED OTHERWISE
EF	EACH FACE	MFR	MANUFACTURER		
EL	ELEVATION	MIN	MINIMUM	VB	VAPOR BARRIER
EMBED	EMBEDMENT	MO	MASONRY OPENING	VERT	VERTICAL
EQ	EQUAL (LY)	MTL	METAL		
EQPT	EQUIPMENT			W	WIDE
EQUIV	EQUIVALENT	NIC	NOT IN CONTRACT	W/	WITH
ES	EACH SIDE	NOM	NOMINAL	W/O	WITHOUT
ETC	ETCETERA	NSG	NON-SHRINK GROUT	WD	WIDTH // WOOD
EW	EACH WAY	NTS	NOT TO SCALE	WP	WORKING POINT
EXP	EXPANSION			WPG	WATERPROOFING
EXP JT	EXPANSION JOINT	O/E	OR EQUAL	WS	WATERSTOP, WOOD SCREW
EXST	EXISTING	OC	ON CENTER	WT	WEIGHT
EXT	EXTERIOR	OD	OUTSIDE DIAMETER	WWF	WELDED WIRE FABRIC
EY	EPOXY	O.F.	OUTSIDE FACE		
		OPNG(S)	OPENING(S)		
		OPP	OPPOSITE		
		OPP HD	OPPOSITE HAND		
		OPT	OPTION (AL)		

ABBREVIATION NOTES:

1. ABBREVIATIONS AND DESIGNATIONS FOR STEEL MEMBERS MAY BE FOUND IN THE CURRENT MANUAL OF STEEL CONSTRUCTION BY AISC.
2. ABBREVIATIONS OF TECHNICAL SOCIETIES AND TRADE ASSOCIATIONS MAY BE FOUND IN THE SPECIFICATIONS
3. WELDING SYMBOLS AND ABBREVIATIONS MAY BE FOUND IN AWS 2.4.
4. ABBREVIATIONS LISTED ARE FOR USE WITH STRUCTURAL DRAWINGS ONLY. SOME ABBREVIATIONS LISTED MAY NOT BE USED ON THE PLANS.

AKM JOB No. 0761209.00

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REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

0 ½ 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 ¼ ½ — 12x18 FORMAT WARNING IF THIS BAR MEASURES ½" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

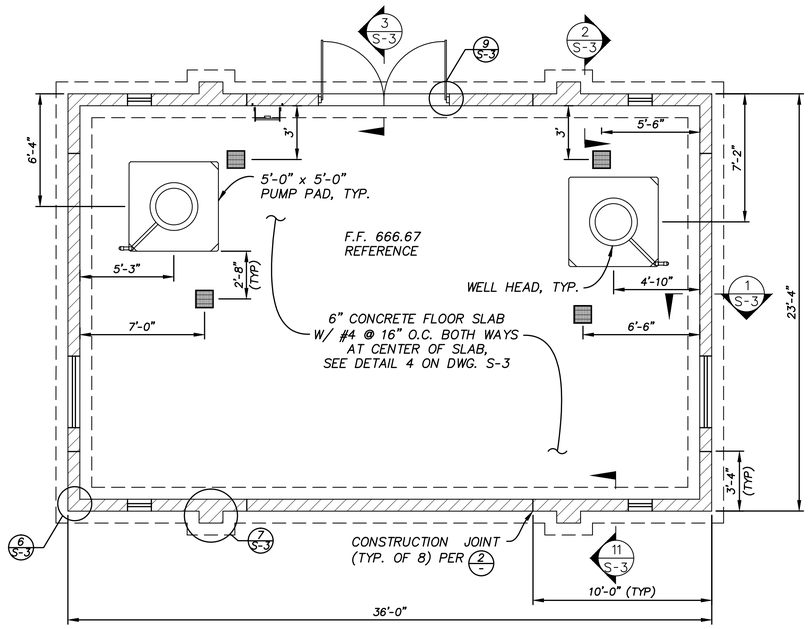
AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

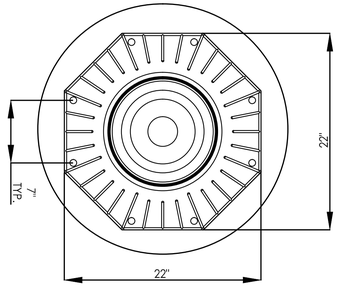
Department of Water and Power Approval
By _____ 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
WELLHOUSE GENERAL STRUCTURAL NOTES

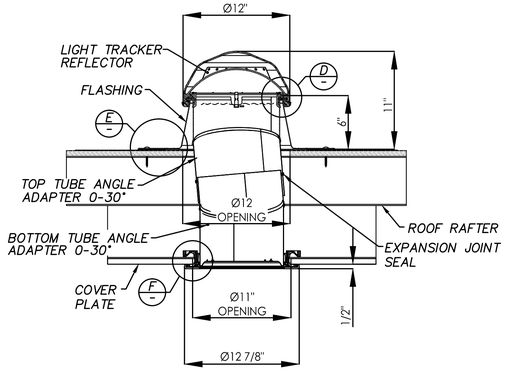
Drawing No. 13-038U
S-1
Sht. 12 of 21

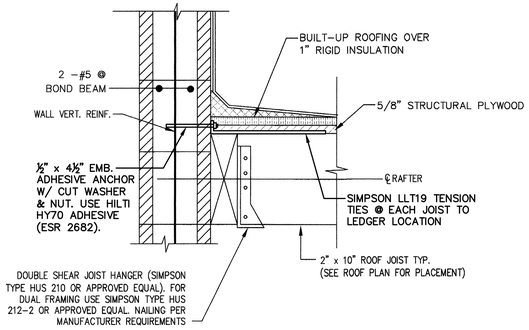


FLOOR PLAN
SCALE: ¼" = 1'-0"

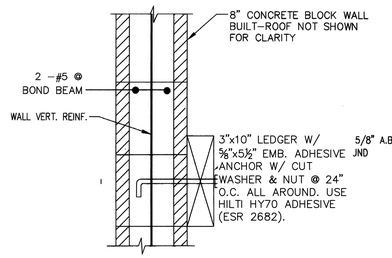


SOLA TUBE TOP VIEW 1
SCALE: 1½" = 1'-0"





DETAIL A
NOT TO SCALE



DETAIL B
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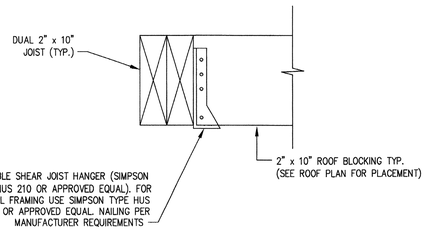
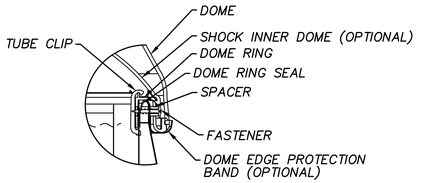
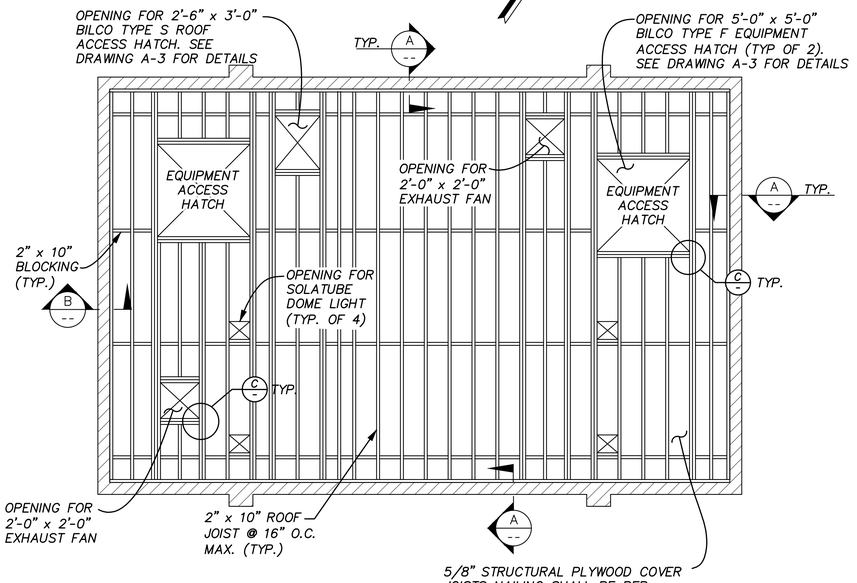


DETAIL C
NOT TO SCALE



DETAIL D
SCALE: 3" = 1'-0"



ROOF FRAMING PLAN
SCALE: ¼" = 1'-0"

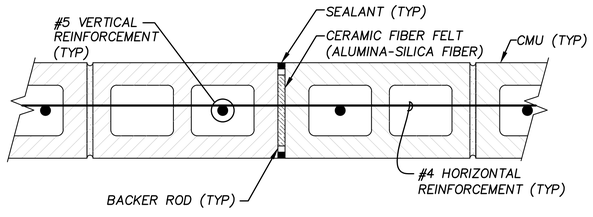
NOTES:

1. ALL TUBE JOINTS & SEAMS TAPED WITH 2" FOIL TAPE (NOT SHOWN).
2. 6" MIN CLEARANCE SHOULD BE MAINTAINED FROM ALL SOLATUBE COMPONENTS AND OTHER PLENUM COMPONENTS.

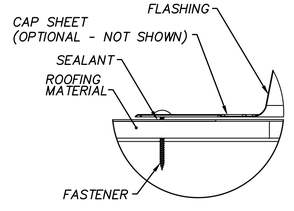
NOTE:

ROOF JOISTS SHALL BE DOUGLAS FIR-LARCH SELECT STRUCTURAL.

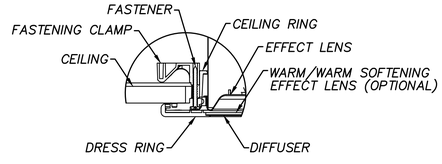
SOLA TUBE SECTION
SCALE: 1½" = 1'-0"



TYPICAL CONSTRUCTION JOINT DETAIL 2
NOT TO SCALE



DETAIL E
SCALE: 3" = 1'-0"



DETAIL F
SCALE: 3" = 1'-0"

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0 ½ 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 ¼ ½ — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779
Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

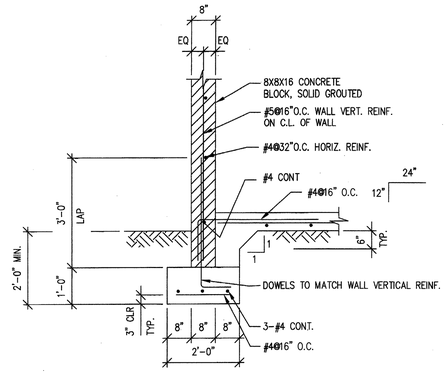
Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
FOUNDATION AND ROOF FRAMING PLANS

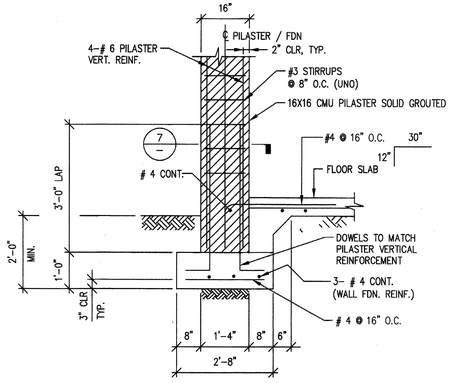
Drawing No. 13-038U
S-2
Sht. 13 of 21

NOTE:

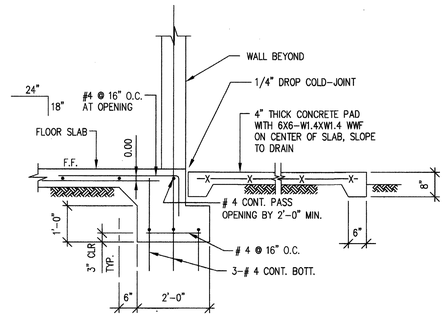
FOOTING AND SLAB SUBGRADE - PROVIDE 12-INCH AGGREGATE BASE COMPACTED TO 95% RELATIVE COMPACTION, AND OVEREXCAVATE AND RE-COMPACT 2' TO 95% RELATIVE COMPACTION.



TYPICAL WALL SECTION | 1

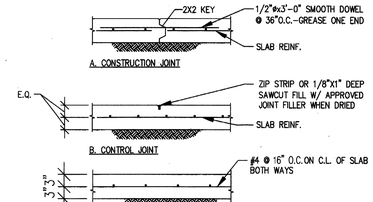


TYPICAL PILASTER SECTION | 2



TYPICAL DETAIL-
* CONCRETE PAD NOT USED. SEE DETAIL 3 ON DRAWING C-2 FOR CONCRETE DRIVEWAY

SECTION AT DOOR | 3



NOTE:

PROVIDE 2" SAND LAYER & MOISTURE BARRIER UNDER BUILDING FLOOR SLAB.

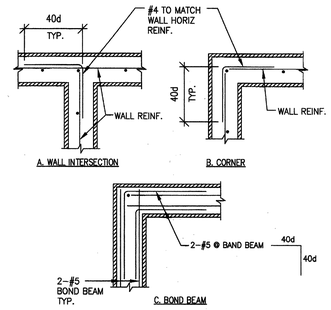
FLOOR SLAB AND JOINTS DETAILS | 4

REINF.	CONCRETE TOP BAR	CONCRETE OTHER	MASONRY
#3	24"	19"	18"
#4	32"	25"	24"
#5	40"	31"	30"
#6	48"	37"	36"
#7	70"	54"	42"
#8	80"	62"	48"
#9	90"	70"	54"

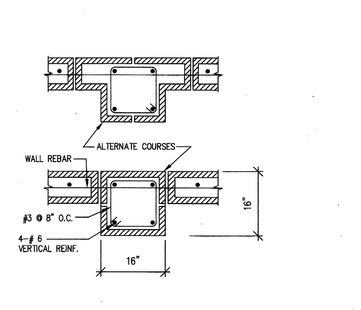
NOTES:

1. CONCRETE LAP LENGTH IS BASED ON CLASS B TENSION SPLICE, Fc = 4,000 PSI AND GRADE 60 REBARS.
2. TOP BAR IS THE HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.
3. USE THIS TABLE WHERE LAP SPLICE LENGTH IS NOT SHOWN ON DRAWINGS.

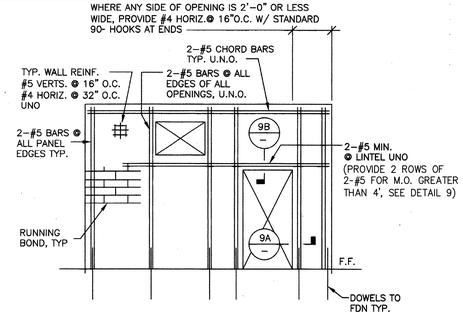
REINFORCING LAP SPLICE SCHEDULE | 5



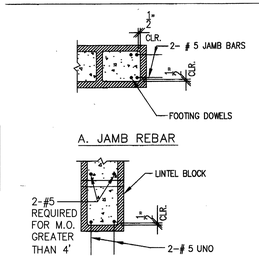
CMU WALL INTERSECTION DETAILS | 6



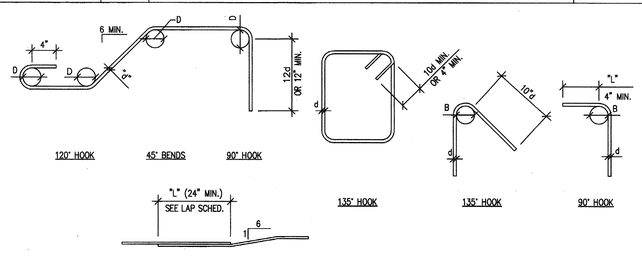
PILASTER SECTION | 7



WALL REINFORCEMENT | 8



DETAIL | 9

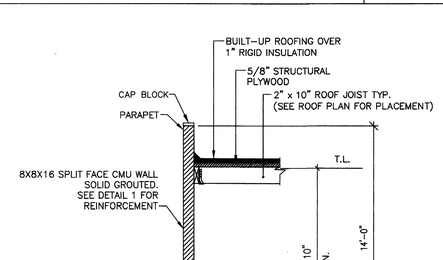


REINF. BAR BEND
ALL GRADES (EXCEPT 40 KSI)
D = 6d FOR #3 THRU #8
D = 8d FOR #9 THRU #11
D = 10d FOR #14 THRU #18
GRADE 40 KSI
D = 5d FOR #3 THRU #11
D = 10d FOR #14 THRU #18

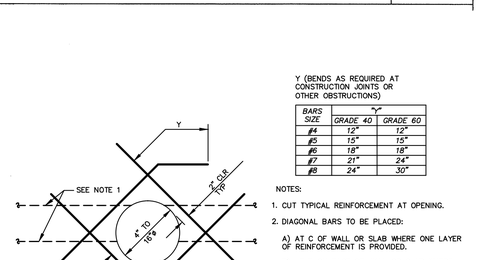
TIES AND STIRRUPS		
BAR SIZE	"L"	"B"
#3 #4 #5	6d	4d
#6 #7 #8	12d	6d

REINF. BAR LAPS	
BAR SIZE	"L" LAP(24" MIN.)
#3 THRU #6	52 BAR DIAMETER
#7 THRU #9	66 BAR DIAMETER
#10 THRU #11	84 BAR DIAMETER

TYPICAL REBAR BENDING DETAILS | 10



TYPICAL WALL SECTION | 11



Y (BENDS AS REQUIRED AT CONSTRUCTION JOINTS OR OTHER OBSTRUCTIONS)

BARS SIZE	"Y" GRADE 40	"Y" GRADE 60
#4	12"	12"
#5	15"	15"
#6	18"	18"
#7	21"	24"
#8	24"	30"

NOTES:

1. CUT TYPICAL REINFORCEMENT AT OPENING.
2. DIAGONAL BARS TO BE PLACED:
   A) AT C OF WALL OR SLAB WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED.
   B) AT EACH FACE OF WALL OR SLAB WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED.
3. UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST REINFORCEMENT CUT.
4. PROVIDE ADDITIONAL REINFORCING FOR FUTURE PIPE PENETRATIONS AS SHOWN ON DRAWINGS M-2 AND A-2.

ADDITIONAL REINFORCING FOR PIPE PENETRATIONS | 12

AKM JOB No. 0761209.00

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REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON No. 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

0 1/2 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 1/4 1/2 — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
STRUCTURAL DETAILS

Drawing No. 13-038U
S-3
Sht. 14 of 21

LIST OF SYMBOLS

SYMBOL	DESCRIPTION
A-1,3	CONDUIT RUN EXPOSED. HASH MARKS INDICATE NUMBER OF #12 AWG (MIN.) CONDUCTORS IN CONDUIT. ALL CONDUCTORS AND CONDUITS SHALL BE SIZED PER NEC. ARROW INDICATES HOME RUN TO PANEL "A" CIRCUITS 1 AND 3 (COMMON NEUTRAL).
	CONDUIT RUN IN FLOOR, SLAB OR UNDERGROUND.
	FLEXIBLE CONDUIT CONNECTION WITH INTEGRAL GROUND CONDUCTOR
	INCOMING LINE.
(A)	FLUORESCENT LIGHTING FIXTURE. TYPE AND MOUNTING AS NOTED. A REPRESENTS CIRCUIT NUMBER FROM LP "A"
S^a	SINGLE-POLE TOGGLE SWITCH, 120V, 20A, HUBBLE #1223 "a" DENOTES OUTLETS CONTROLLED BY SWITCH.
S^2	DOUBLE-POLE TOGGLE SWITCH, 120V, 20A HUBBLE #1222.
S_M	MANUAL MOTOR STARTER, 1 HP MAX., 120V WITH OVERLOAD HEATER FOR MOTOR SIZE INDICATED ON PLANS.
WP	DUPLEX CONVENIENCE RECEPTACLE, 2 POLE, 3 WIRE, 120VAC, 20A. MOUNTING HEIGHT AS NOTED. WP = OUTDOOR WEATHERPROOF. GFCI = GROUND FAULT CIRCUIT INTERRUPTER.
	ENCLOSURE TO BE DESCRIBED ON DRAWING.
	SURFACE MOUNTED PANEL.
	LINE DISCONNECT SWITCH. NON-FUSED UNLESS OTHERWISE NOTED. SWITCH RATING AS NOTED ON PLANS OR SPECIFICATIONS. NF = NON-FUSED. F = FUSED.
LOS	CONTROL STATION FOR MOTOR. SEE SCHEMATIC FOR SWITCH ARRANGEMENT. LOS = LOCK-OUT-STOP.
15	ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER

SYMBOL	DESCRIPTION
J JB	JUNCTION BOX. AT ALL OUTDOOR LOCATIONS, BOX SHALL INCLUDE A NEMA 4 ENCLOSURE WITH HUBS FOR ALL CONDUIT ENTRANCES.
▲	DEVICE LOCATED IN FIELD ON OR NEAR PUMP (MOTOR).
	TRANSFORMER. DESCRIPTION AS NOTED ON PLANS OR SPECIFICATIONS.
T	TRANSFORMER.
300AT 400AF	THERMAL MAGNETIC BREAKER. 300 AT INDICATES TRIP AMPS. 400 AF INDICATES FRAME SIZE.
30 *	CIRCUIT BREAKER. UPPER NUMBER IS CONTINUOUS TRIP ELEMENT RATING. * INDICATES FIELD SETTING BASED ON INSTALLED MOTOR.
	FUSE.
T	THERMOSTAT. MOUNT AS NOTED ON PLANS.
15 OR 15	SQUIRREL CAGE MOTOR. 15 INDICATES HORSEPOWER.
M	POWER COMPANY METERING. SEE PLANS AND SPECIFICATIONS.
	GROUND.
	GROUND ROD 3/4" X 10' COPPERCLAD UNLESS OTHERWISE NOTED.
	GROUND WELL.
	NORMALLY OPEN PUSH BUTTON- MOMENTARY TYPE. DOTTED LINE INDICATES DEVICE MOUNTED REMOTE FROM PANEL.
	NORMALLY CLOSED PUSH BUTTON-MOMENTARY TYPE.
LOS	LOCK-OUT-STOP PUSH BUTTON WITH LOCKING DEVICE.
WPFR	NORMALLY OPEN INTERLOCK. LETTERS IDENTIFY RELAY COIL.
WPFR	NORMALLY CLOSED INTERLOCK. LETTERS IDENTIFY RELAY COIL

SYMBOL	DESCRIPTION
WP FR	CONTROL RELAY. LETTERS IN CIRCLE IDENTIFY RELAY COIL
WP CT	TIME DELAY RELAY. LETTERS IN CIRCLE IDENTIFY TIME DELAY RELAY. SEE SCHEMATIC FOR OPERATING PARAMETERS. PROVIDE POWER CONNECTION AS REQUIRED.
NCTO	NORMALLY CLOSED CONTACT TIMED TO OPEN AFTER ENERGIZATION.
NOTC	NORMALLY OPEN CONTACT TIMED TO CLOSE AFTER ENERGIZATION.
NCTC	NORMALLY CLOSED CONTACT. INSTANT OPEN ON ENERGIZATION. TIMED TO CLOSE AFTER DE-ENERGIZATION.
NOTO	NORMALLY OPEN CONTACT. INSTANT CLOSE ON ENERGIZATION. TIMED TO OPEN AFTER DE-ENERGIZATION.
TSH	TEMPERATURE SWITCH. NORMALLY CLOSED.
TSH	TEMPERATURE SWITCH. NORMALLY OPEN.
PSH	PRESSURE SWITCH. NORMALLY CLOSED.
PSL	PRESSURE SWITCH. NORMALLY OPEN.
OFF	ON-OFF SWITCH.
R	INDICATING LIGHT. R=RED, G=GREEN, W=WHITE.
	CONDUCTORS-CONNECTED.
	CONDUCTORS- NOT CONNECTED.
RTM	RUN TIME METER.
	SPACE HEATER.
	TELEPHONE OUTLET.
4	MAGNETIC MOTOR STARTER, NEMA SIZE 4
SS	SOLID STATE SOFT STARTER

LIST OF ABBREVIATIONS

A	AMPERE	DN	DOWN	G	GREEN	PSH	PRESSURE SWITCH HIGH
AC	ALTERNATING CURRENT	DWG	DRAWING	LTG	LIGHTING	PT	PRESSURE TRANSDUCER
AI	ANALOG INPUT	EC	ETHERNET CONNECTION	M	MOTOR, MAGNETIC STARTER	PWR	POWER
A I C	AMPERES INTERRUPTING CAPACITY	EF	EXHAUST FAN	mA	MILLIAMP	REC	RECEPTACLE
AFF	ABOVE FINISHED FLOOR	EL	ELEVATION	MCC	MOTOR CONTROL CENTER	RPM	REVOLUTIONS PER MINUTE
ALT	ALTERNATOR	GND	GROUND	MCP	MOTOR CIRCUIT PROTECTOR	RTU	REMOTE TELEMETRY UNIT
AO	ANALOG OUTPUT	HOA	HAND-OFF-AUTOMATIC	MCS	MOLDED CASE SWITCH	SHLD	SHIELDED
APPROX	APPROXIMATELY	HP	HORSEPOWER	MH	MANHOLE	SHT	SHEET
AWG	AMERICAN WIRE GAUGE	HZ	HERTZ	MIN	MINIMUM	SSMC	SOLID STATE MOTOR CONTROLLER
BC	BARE COPPER	INSTR	INSTRUMENTATION	MTD	MOUNTED	TEFC	TOTALLY ENCLOSED FAN COOLED
BKR	BREAKER	KVA	KILOVOLT AMPERES	NA	NOT APPLICABLE	TDR	TIME DELAY RELAY
BLDG	BUILDING	KW	KILOWATT	N/C	NORMALLY CLOSED	TYP	TYPICAL
C	CONDUIT	KWH	KILOWATT HOUR	NIC	NOT IN CONTRACT	TSP	TWISTED SHIELDED PAIR
C & I	CONTROLS & INSTRUMENTATION	LCL	LEAST COMMON LOAD	NO	NORMALLY OPEN, NUMBER	V	VOLT, VOLTMETER
CKT	CIRCUIT	LOS	LOCK-OUT STOP	NTS	NOT TO SCALE	VFD	VARIABLE FREQUENCY DRIVE
CO	CONDUIT ONLY	LP	LIGHTING PANEL	OIT	OPERATOR INTERFACE TERMINAL	W	WATT
COMB	COMBINATION	LPU	LIVE PROTECTION UNIT	O/L	OVERLOAD	W/	WITH
CONT	CONTROL	LSH	LEVEL SWITCH HIGH	P	POLE, PHASE	WP	WEATHER PROOF
CPT	CONTROL POWER TRANSFORMER	EM	EMERGENCY	PB	PULL BOX, PUSH BUTTON	XFMR	TRANSFORMER
DC	DIRECT CURRENT	FLA	FULL LOAD AMPERES	PCP	PUMP CONTROL PANEL	XMTR	TRANSMITTER
DI	DIGITAL INPUT	FLEX	FLEXIBLE	PI	PRESSURE INDICATOR	XP	EXPLOSION PROOF
DISCH	DISCHARGE	FLUOR	FLUORESCENT	PLC	PROGRAMABLE LOGIC CONTROLLER	ZS	POSITION SWITCH (LIMIT SWITCH)
DO	DIGITAL OUTPUT	FS	FLOW SWITCH	PVC	POLYVINYL CHLORIDE		
		FT	FOOT 1 FLOW TRANSMITTER	PRESS	PRESSURE		

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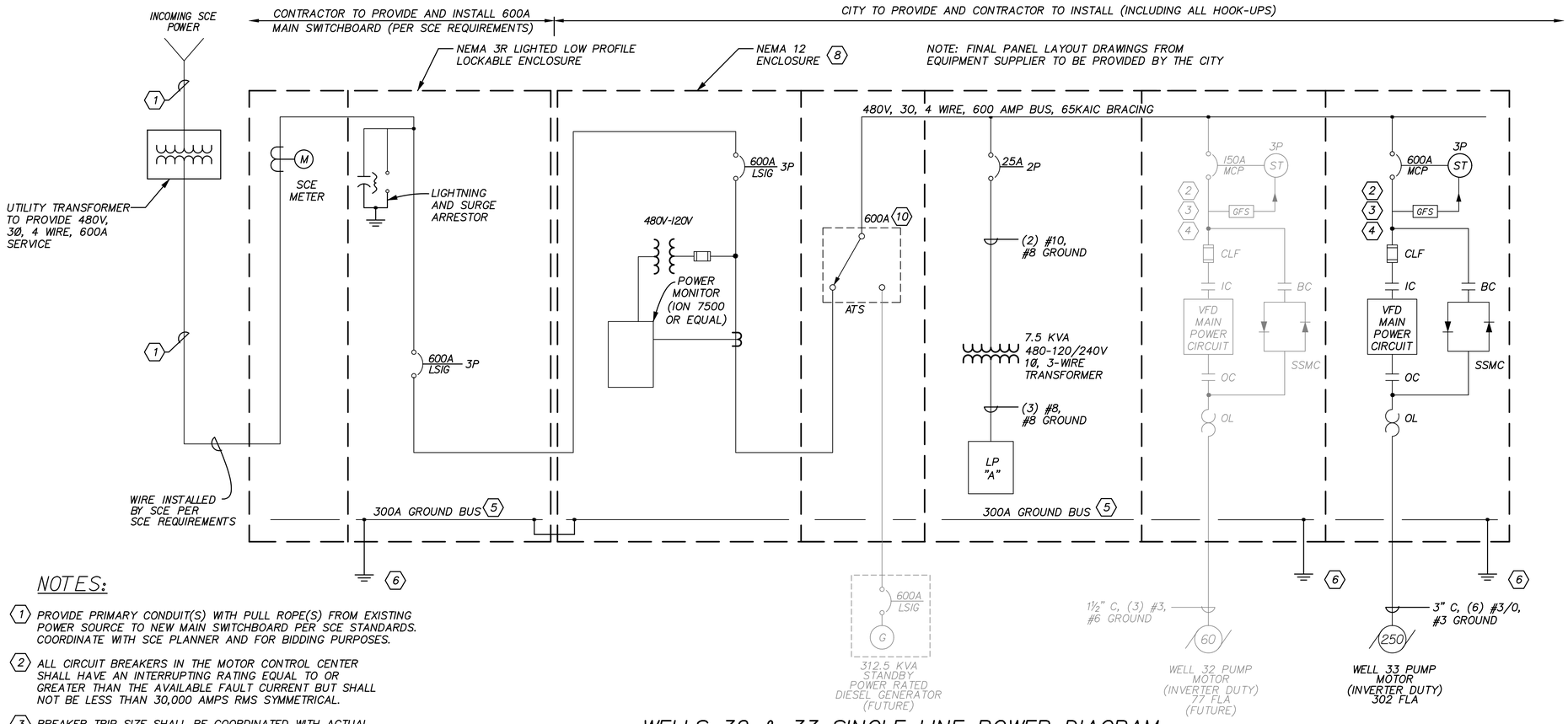
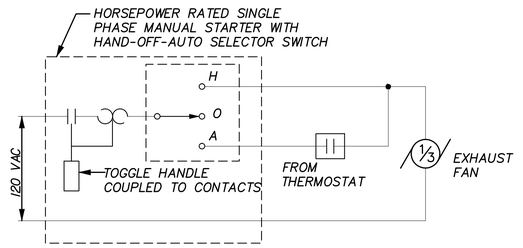
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
ELECTRICAL SYMBOLS AND LEGEND

Drawing No. 13-038U
E-1
Sht. 15 of 21



WELLS 32 & 33 SINGLE LINE POWER DIAGRAM



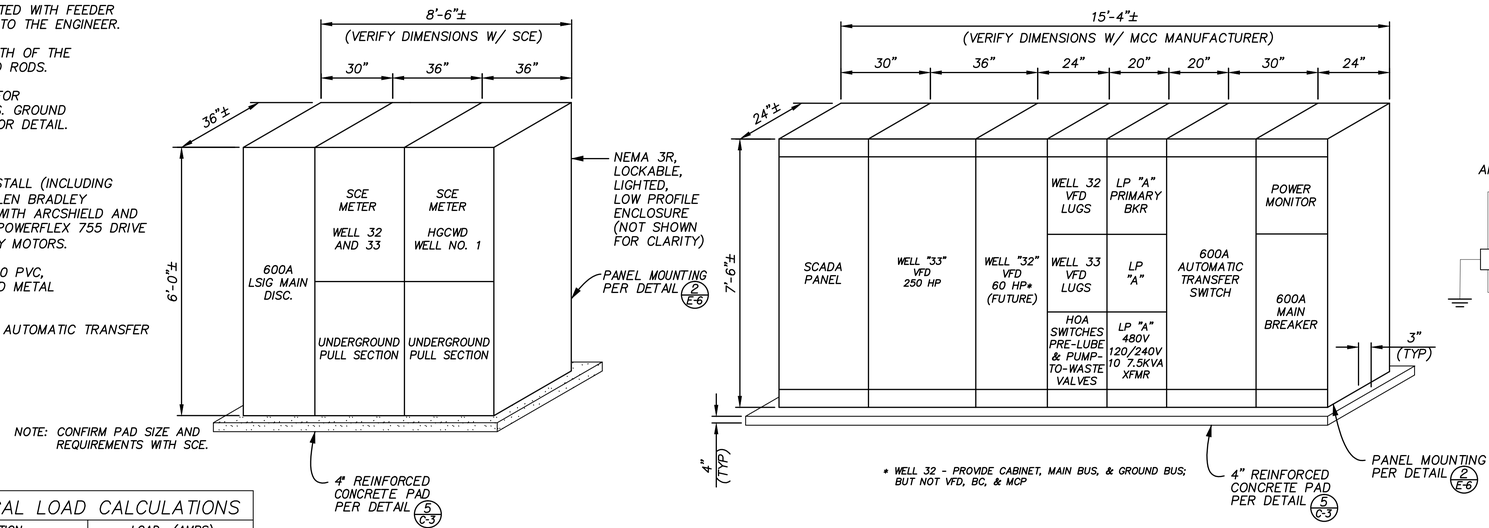
EXHAUST FAN CONTROL DIAGRAM

NOTES:

1. PROVIDE PRIMARY CONDUIT(S) WITH PULL ROPE(S) FROM EXISTING POWER SOURCE TO NEW MAIN SWITCHBOARD PER SCE STANDARDS. COORDINATE WITH SCE PLANNER AND FOR BIDDING PURPOSES.
2. ALL CIRCUIT BREAKERS IN THE MOTOR CONTROL CENTER SHALL HAVE AN INTERRUPTING RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT BUT SHALL NOT BE LESS THAN 30,000 AMPS RMS SYMMETRICAL.
3. BREAKER TRIP SIZE SHALL BE COORDINATED WITH ACTUAL MOTOR INSTALLED.
4. INSURE ALL LOAD BREAKERS ARE COORDINATED WITH FEEDER BREAKERS. PROVIDE COORDINATION CURVES TO THE ENGINEER.
5. PROVIDE 300A GROUND BUS THE FULL LENGTH OF THE ENCLOSURE AND INSTALL UFER AND GROUND RODS.
6. PROVIDE GROUNDING SYSTEM AS REQUIRED FOR GROUND RESISTANCE OF LESS THAN 5 OHMS. GROUND PER NEC ARTICLE 250.122. SEE DWG. E-6 FOR DETAIL.
7. FOR MCC ELEVATION SEE HEREON.
8. CITY WILL FURNISH AND CONTRACTOR TO INSTALL (INCLUDING ALL HOOK-UPS). THE MCC SHALL BE AN ALLEN BRADLEY MOTOR CONTROL CENTER CENTERLINE 2100 WITH ARCSHIELD AND SECURECONNECT, WITH AN ALLEN BRADLEY POWERFLEX 755 DRIVE (CITY STANDARD) RATED FOR INVERTER DUTY MOTORS.
9. CONDUITS BELOW GRADE TO BE SCHEDULE 80 PVC, AND ABOVE GRADE TO BE PVC COATED RIGID METAL PER SPECIFICATIONS.
10. 600A THREE POLE DOUBLE THROW 3-PHASE AUTOMATIC TRANSFER SWITCH, ASCO 7000 SERIES.

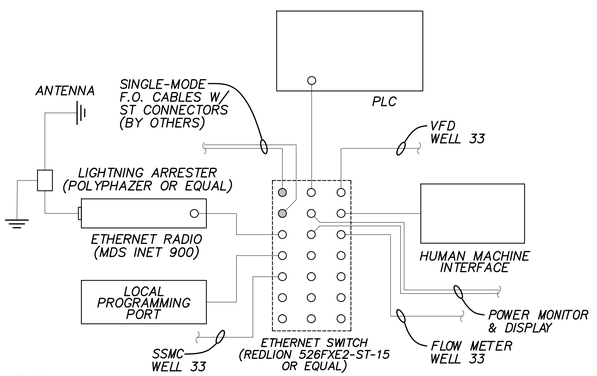
MASTER I/O LIST

ITEM NO.	DESCRIPTION	SIGNAL TYPE
1	VFD WELL 33	EC
2	VFD WELL 32 (FUTURE)	EC
3	SSMC WELL 33	EC
4	SSMC WELL 32 (FUTURE)	EC
5	FLOW METER WELL 33	EC
6	FLOW METER WELL 32 (FUTURE)	EC
7	POWER MONITOR	EC
8	POWER MONITOR DISPLAY MODULE	EC
9	PLC	EC
10	HUMAN MACHINE INTERFACE (HMI)	EC
11	RADIO	EC
12	LOCAL PROGRAMMING PORT	EC
13	INTRUSION ALARM	DI
14	WELL 33 PUMP-TO-WASTE VALVE	DI
15	WELL 33 CHECK VALVE LIMIT SWITCH	DI
16	WELL 33 RUNNING	DI
17	WELL 33 VFD/SSMC FAULT	DI
18	WELL 33 IN LOCAL MODE	DI
19	WELL 33 IN REMOTE MODE	DI
20	WELL 33 POWER FAULT	DI
21	WELL 32 PUMP-TO-WASTE VALVE (FUTURE)	DI
22	WELL 32 CHECK VALVE LIMIT SWITCH (FUTURE)	DI
23	WELL 32 RUNNING (FUTURE)	DI
24	WELL 32 VFD/SSMC FAULT (FUTURE)	DI
25	WELL 32 IN LOCAL MODE (FUTURE)	DI
26	WELL 32 IN REMOTE MODE (FUTURE)	DI
27	WELL 32 POWER FAULT (FUTURE)	DI
28	WELL 33 PUMP-TO-WASTE SOLENOID VALVE	DO
29	WELL 33 START COMMAND	DO
30	WELL 32 PUMP-TO-WASTE SOLENOID VALVE (FUTURE)	DO
31	WELL 32 START COMMAND (FUTURE)	DO
32	WELL 33 LEVEL	AI
33	WELL 33 DISCHARGE PRESSURE	AI
34	WELL 32 LEVEL (FUTURE)	AI
35	WELL 32 DISCHARGE PRESSURE (FUTURE)	AI



SWITCHBOARD AND MOTOR CONTROL CENTER ELEVATION

NOT TO SCALE



ETHERNET SWITCH CONNECTION DIAGRAM 1 TYP

AKM JOB No. 0761209.00

Underground Service Alert
Call: TOLL FREE 811
TWO WORKING DAYS BEFORE YOU DIG

ELECTRICAL LOAD CALCULATIONS

DESCRIPTION	LOAD (AMPS)
WELL PUMP 32 (FUTURE)	77
WELL PUMP 33	302
LOAD CENTER	22
25% OF LARGEST LOAD	76
TOTAL LOAD	477

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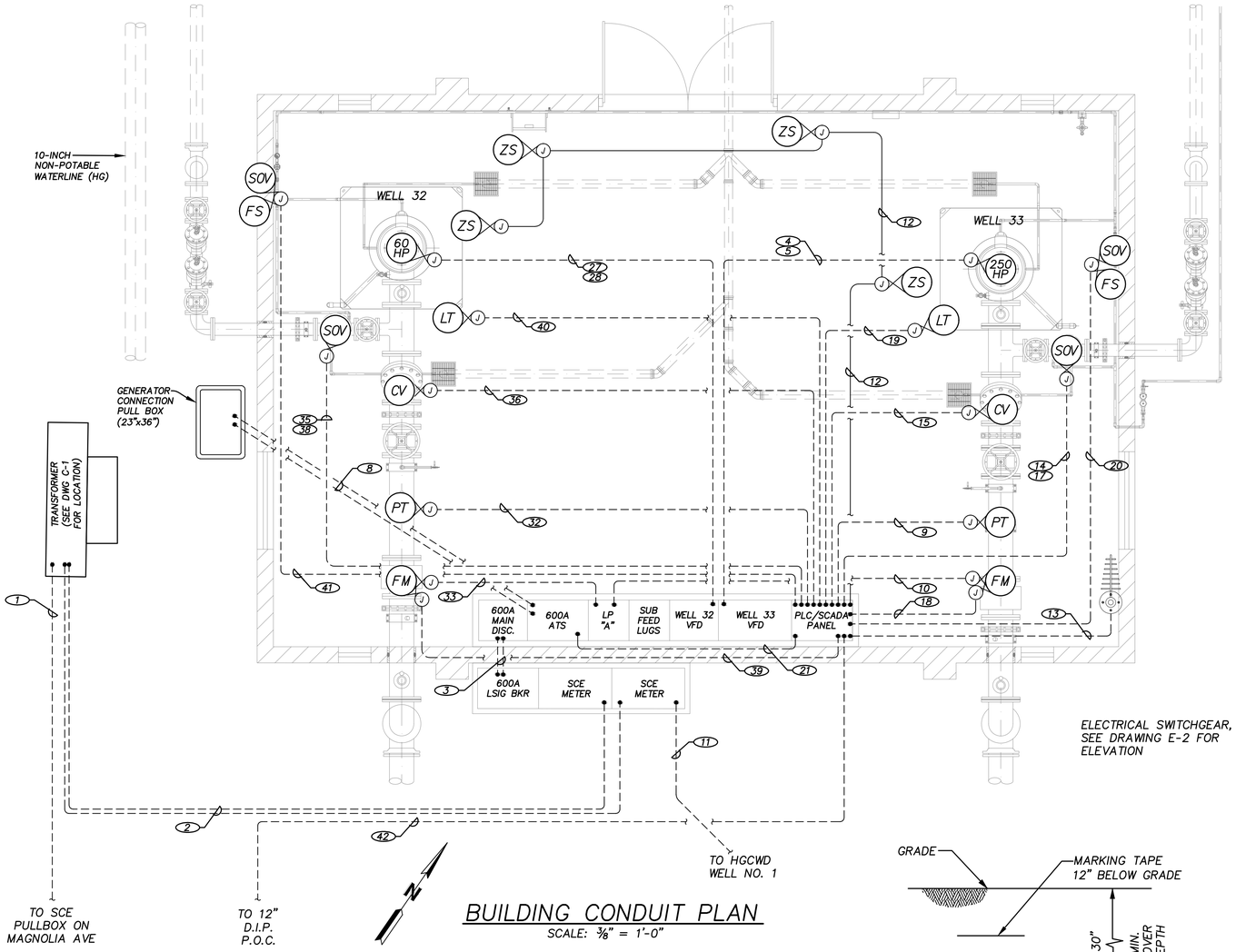
CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
ELECTRICAL SINGLE LINE DIAGRAM AND CONTROL DIAGRAMS

Drawing No. 13-038U
E-2
Sht. 16 of 21



BUILDING CONDUIT PLAN

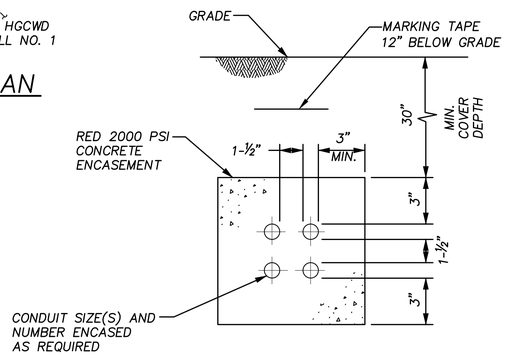
SCALE: ⅜" = 1'-0"

ELECTRICAL SWITCHGEAR, SEE DRAWING E-2 FOR ELEVATION

CONDUIT SCHEDULE

	CONDUIT NO.	CONDUIT SIZE	CABLE QTY	CABLE SIZE	FROM	TO	REMARKS
	1	5"	PULL ROPE		SCE PULLBOX	SCE TRANSFORMER	PULL ROPE ONLY, CABLE BY SCE
	2	(2) 5"	PULL ROPE		SCE TRANSFORMER	SCE METER	PULL ROPE ONLY, CABLE BY SCE
	3	(2) 3"	6, 2	#350 MCM, #1	SWITCHBOARD	MCC	480V, 3Ø POWER, GROUND
	4	3"	6, 1	#3/0, #3	WELL 33 VFD	WELL 33 PUMP MOTOR	480V, 3Ø POWER, GROUND
	5	1"	4	#12	WELL 33 PUMP MOTOR	WELL 33 VFD	SPACE HEATER, MOTOR TEMP SWITCH
	8	(2) 4"	PULL ROPES		GENERATOR CONNECTION PULL BOX	ATS	PULL ROPE ONLY, CABLE BY CITY
	9	1"	1	#16 TSP	WELL 33 PRESSURE TRANSDUCER	PLC/SCADA	PRESSURE SIGNAL
	10	1"	2, 1	#12, #12	LP "A" - CKT 6	WELL 33 FLOWMETER DISPLAY	120V, 1Ø POWER, GROUND
	11	5"	-	-	HOME GARDENS SCE METER	HOME GARDENS WELL #1	PULL ROPE ONLY CABLE BY OTHERS
	12	1"	2	#12	DOOR/HATCH MOUNTED LIMIT SWITCH	PLC/SCADA	INTRUSION ALARMS DOOR & ROOF HATCHES
	13	2"	ANTENNA CABLE BY RADIO SUPPLIER		ANTENNA	ETHERNET RADIO	ANTENNA CABLE
	14	1"	4	#12	PLC/SCADA	WELL 33 DISCHARGE TO WASTE VALVE	OPEN/CLOSE SIGNAL
	15	1"	2, 1	#12, #12	CHECK VALVE LIMIT SWITCH	PLC/SCADA	CHECK VALVE POSITION
	17	1"	2	#12	WELL 33 DISCHARGE TO WASTE VALVE	PLC/SCADA	LIMIT SWITCH
	18	1"	ETHERNET CABLE PROVIDED BY FLOWMETER SUPPLIER		WELL 33 FLOWMETER DISPLAY	ETHERNET SWITCH	FLOW SIGNAL
	19	1"	1	#16 TSP	WELL 33 LEVEL DISPLAY	PLC/SCADA	LEVEL SIGNAL
	20	1"	4	#12	PLC/SCADA	WELL 33 SOLENOID VALVE/ FLOW SWITCH	OPEN/CLOSE
	21	1"	RS-232 CABLE		ATS	PLC/SCADA	ATS SIGNALS
*	27	1½"	3, 1	#3, #6	WELL 32 VFD	WELL 32 PUMP MOTOR	480V, 3Ø POWER, GROUND
*	28	1"	4	#12	WELL 32 PUMP MOTOR	WELL 32 VFD	SPACE HEATER, MOTOR TEMP SWITCH
*	32	1"	1	#16 TSP	WELL 32 PRESSURE TRANSDUCER	PLC/SCADA	PRESSURE SIGNAL
*	33	1"	2, 1	#12, #12	LP "A" - CKT 7	WELL 32 FLOWMETER DISPLAY	120V, 1Ø POWER, GROUND
*	35	1"	4	#12	PLC/SCADA	WELL 32 DISCHARGE TO WASTE VALVE	OPEN/CLOSE SIGNAL
*	36	1"	2, 1	#12, #12	CHECK VALVE LIMIT SWITCH	PLC/SCADA	CHECK VALVE LIMIT SWITCH
*	38	1"	2	#12	WELL 32 DISCHARGE TO WASTE VALVE	PLC/SCADA	LIMIT SWITCH
*	39	1"	ETHERNET CABLE PROVIDED BY FLOWMETER SUPPLIER		WELL 32 FLOWMETER DISPLAY	ETHERNET SWITCH	FLOW SIGNAL
*	40	1"	1	#16 TSP	WELL 32 LEVEL DISPLAY	PLC/SCADA	LEVEL SIGNAL
*	41	1"	4	#12	PLC/SCADA	WELL 32 SOLENOID VALVE/ FLOW SWITCH	OPEN/CLOSE
	42	2"	PULL ROPES		12" D.I.P. P.O.C.	PLC/SCADA	PULL ROPE ONLY, F.O. BY OTHERS

* PROVIDE CONDUITS AND PULL ROPES, BUT NO WIRES FOR WELL 32.



NOTE:
ALL BURIED CONDUIT SHALL BE RED CONCRETE ENCASED. MINIMUM CONDUIT SIZE BELOW GROUND SHALL BE 1"

ENCASED CONDUIT DETAIL (1/--)

NOT TO SCALE

NOTES:

1. CONDUIT PLAN IS DIAGRAMATIC. CONTRACTOR SHALL ROUTE CONDUITS AS NECESSARY FOR FIELD CONDITIONS. CONDUIT ROUTING SHALL NOT CREATE TRIPPING HAZARDS IN THE BUILDING.
2. ALL ABOVE GRADE CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL.
3. - - - - - DENOTES CONCEALED/BURIED CONDUIT.
4. ——— DENOTES CONDUIT SUPPORTED ON WALL OR FROM CEILING.
5. ALL BURIED CONDUITS (EXCEPT THOSE UNDER BUILDING SLAB SHALL BE CONCRETE ENCASED PER DETAIL 1/--.
6. INSTALLATION OF PROTECTIVE BARRIERS SHALL CONFORM WITH SCE REQUIREMENTS.

AKM JOB No. 0761209.00

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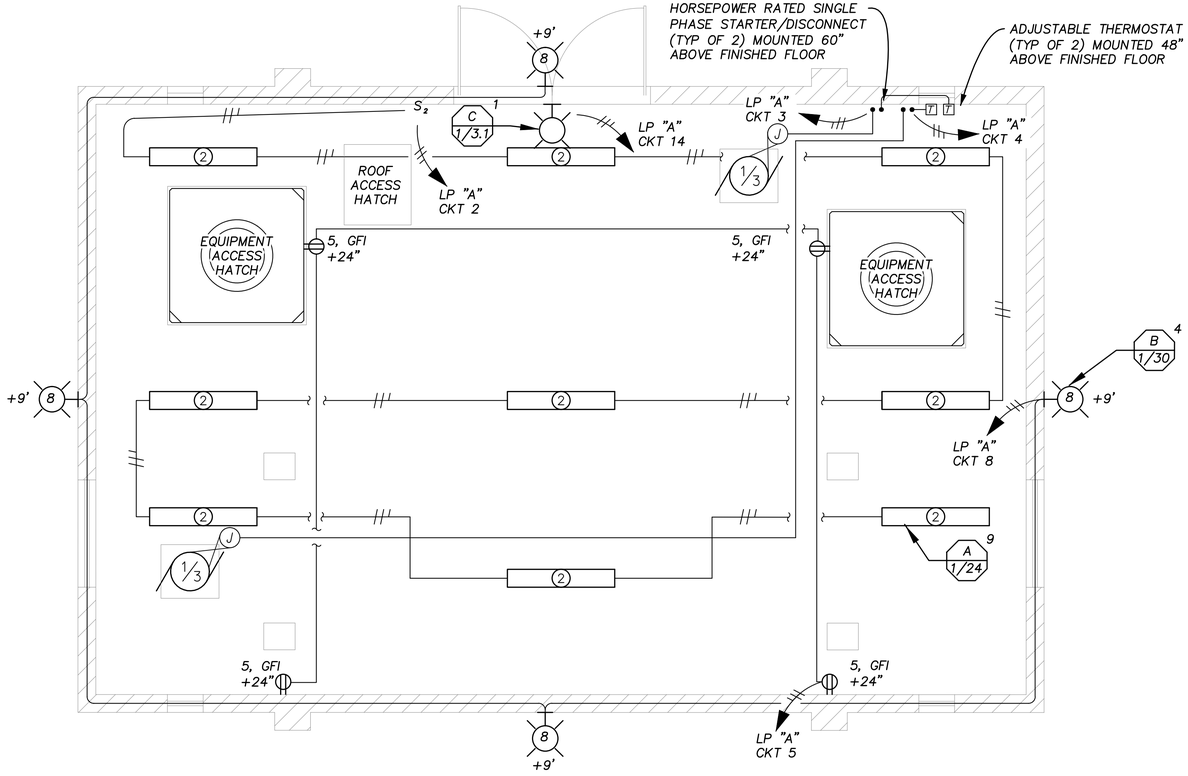
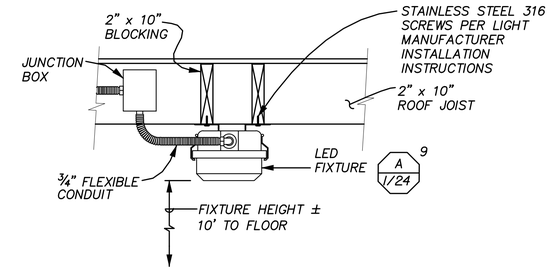
WELLS 32 AND 33 EQUIPPING
CONDUIT PLAN

Drawing No. 13-038U
E-3
Sht. 17 of 21



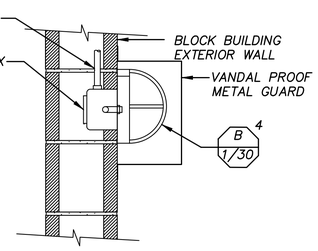
BUILDING LIGHTING AND RECEPTACLE PLAN

SCALE: 3/8" = 1'-0"



LED FIXTURE MOUNTING DETAIL 1

NOT TO SCALE



NOTES:

1. PROVIDE CAST OUTLET BOX
2. SET BOX OUT FROM WALL AS SHOWN
3. PROVIDE GASKET BETWEEN BOX AND FIXTURE
4. INSTALLATION SHALL BE WATER-TIGHT
5. SEE FIXTURE SCHEDULE FOR FIXTURE DESCRIPTION

WALL HUNG EXTERIOR FIXTURE MOUNTING DETAIL 2

NOT TO SCALE

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1. CONDUIT PLAN IS DIAGRAMATIC. CONTRACTOR SHALL ROUTE CONDUITS AS NECESSARY FOR FIELD CONDITIONS. CONDUIT ROUTING SHALL NOT CREATE TRIPPING HAZARDS IN THE BUILDING.
2. ALL ABOVE GRADE CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL.
3. – – – – – DENOTES CONCEALED/BURIED CONDUIT.
4. ———— DENOTES CONDUIT SUPPORTED ON WALL OR FROM CEILING.
5. ALL BURIED CONDUITS SHALL BE CONCRETE ENCASED PER DETAIL 1/--.
6. INSTALLATION OF PROTECTIVE BARRIERS SHALL CONFORM WITH SCE REQUIREMENTS.

MOUNTING MCC — PANEL LP-A — MAIN 40 A CB
240/120 VOLTS 1 PHASE 3 WIRE — BUS 60 AMP

WATTAGE Ø A	WATTAGE Ø B	OTHER	REC	LG	POLE	BKR	CR	A	B	CR	BKR	POLE	LG	REC	OTHER	WATTAGE Ø A	WATTAGE Ø B
100		PLC/SCADA			1	15	1			2	15	1	9		LED ROOM LIGHTS	216	
	900	EXHAUST FAN 1			1	15	3			4	15	1			EXHAUST FAN 2		900
720		GFI RECEPTACLE	4		1	15	5			6	15	1			FLOW METER 2	100	
	100	FLOW METER 1			1	15	7			8	15	1	4		EXTERIOR LIGHTS		120
-		SPARE			1	15	9			10	15	1			SPARE	-	
	200	GEN. ENCLOSURE			1	15	11			12	15	1			SPARE		-
-		SPARE			1	15	13			14	15	1			EXIT SIGN	100	
	-	SPARE			1	15	15			16	15	1			SPARE		-
-		SPARE			1	15	17			18	15	1			SPARE	-	
820	1200	WATTS/LINE														416	1020
TOTAL WATTS = 3,456		AMPS/LINE														AMPS = 14.4	
																LCL AMPS = 18.0	

CIRCUIT NUMBERS ARE FOR REFERENCE. CONTRACTOR SHALL BALANCE LOADS, UNLESS OTHERWISE NOTED/SHOWN PROVIDE 1" C, (2) #12 AND (1) #12 GROUND FOR EACH CIRCUIT TO DEVICE AND/OR SWITCH

LOAD CENTER SCHEDULE

MARK	VOLTAGE	DESCRIPTION	DETAIL
A 1/24	120 VAC	LED WET LOCATION STRIPLIGHT BY LITHONIA LIGHTING, MODEL XWMLED	1/--
B 1/30	120 VAC	LED WALL MOUNTED LUMINAIRES, WEATHERPROOF UL 1598 RATED FOR WET LOCATION USE, FULL CUTOFF LIGHTING WITH PHOTOCONTROL OPTION, HUBBELL LAREDO LCC COMPACT WALLPACK LCC-1211-2-PCI	2/--
C 1/3.1	120 VAC	LED SURFACE MOUNTED INTERIOR LOW-PROFILE ALUMINUM EXIT SIGNS (GREEN EMERGENCY WITH NICKEL-CADMIUM AND AUTOMATIC CHARGER) SHALL BE HUBBELL MODEL LEDS-1-EM-G-WW	--

LIGHTING FIXTURE SCHEDULE

AKM JOB No. 0761209.00

Underground Service Alert
Call: TOLL FREE 811
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER — GARY J. HOBSON — R07779 — Exp. 3/31/19 — CIVIL — STATE OF CALIFORNIA

0 1/2 1 — 24x36 FORMAT IF THIS BAR MEASURES 1" THEN DRAWING SCALE IS AS NOTED
0 1/4 1/2 — 12x18 FORMAT WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779
Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

Engineering _____
Operations _____

Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
LIGHTING PLAN

Drawing No. 13-038U
E-4
Sht. 18 of 21

600A LSIG
øA
øB
øC
120V VAC FROM CONTROLS
ESTP
ST
CPT 480/120V
IC-1
L1/1 T1/2
L2/3 T2/4
L3/5 T3/6
MOV
SMC FLEX
INPUT REACTOR
OC-2
OC-1
250 MTR
MOTOR SPACE HEATER
MOTOR TEMP SWITCH
POWERFLEX 755 ADJUSTABLE FREQUENCY AC MOTOR DRIVE W/24V DC INTERFACE
L1R L2S L3T
T1U T2V T3W
PE
HORIZ. GRD. BUS
480-120V
GRD
T-1 FAN1
T-2 FAN2
T-3 FAN3
T-4 FAN4
T-5
CABINET HEATER
0-60 SEC ON DELAY
PFT
POWER FAIL TIMER
PFAR
POWER FAIL AUTOMATIC RESET REALY
PFT NOTC
PF
CONTROL POWER ON
PF
CONTROL POWER FAIL TO PLC
FAIL RESET PUSH BUTTON
RR
FAIL RESET
PFAR NCTO
RR
FAIL RESET TO VFD
W
CONTROL POWER ON INDICATION
0-30 SEC ON DELAY
SUP
VFDR
VFD RUN
VFD RUN FROM VFD
VFDR
VFD RUN TO PLC
SUP
VFDF
VFD FAULT
VFD FAIL FROM VFD
VFDF
VFD FAULT TO PLC
VFDR
G
WELL PUMP RUNNING INDICATION
SSMCR
ETM
WELL PUMP RUNNING TIME
WPR
WELL PUMP RUN
0-30 SEC ON DELAY
VFDF SSMCM
FLT
VFD/SSMC FAULT TIMING RELAY
SMCF SSMCM
FLT NOTC
VFD/SSMC FAULT TO PLC
FLT NOTC
R
VFD/SSMC FAULT INDICATION
CWP NCTO
WELL PUMP MOTOR SPACE HEATER
WPR
WELL PUMP RUN TO PLC
TS-1
RR
MHT
MOTOR HIGH TEMPERATURE
TEMP SWITCH N.C. OPENS ON HIGH MTR TEMP
MHT
MOTOR HIGH TEMPERATURE FAIL TO PLC
A
A
TO CONTROLS
15 DIG OUT 2/3 COMMON
RUN
16 DIG OUT 3 N.O.
11 FAIL
12 DIG OUT 1 COMMON
25 DIG IN COMMON
26 +24VDC COMMON
24 +24VDC
VRC NOTC
WPA
RR
28 DIG IN 2 RUN W/COMM
30 DIG IN 4 SPEED SEL
29 DIG IN 3 CLEAR FAULTS
1 (-)
AN IN 1
2 (+)
4-20mA
SPEED COMMAND FROM PLC
GRD
6 (-)
4
AN OUT 1
7 (+)
4-20mA
SPEED FEED BACK TO PLC
GRD
SPEED
22
(3) (2) (1)
4
3
5
SPEED CONTROL POTENTIOMETER
GRD
AN IN 2
17
AN IN 1 CURRENT JUMPER
18
HIM LCD DISPLAY FULL NUMERIC KEYPAD
DPI PORT 3
DPI PORT 2
DPI PORT 2
20-COMM-M ETHERNET (MOD BUS TCP)
CAT 6 CABLE TO ETHERNET SWITCH IN PLC ENCLOSURE

A
B
MHT
SRC NCTO
VRC NCTO
PSL-1
N.C. OPENS ON LOW DISCHARGE PRESSURE
0-60 SEC OFF DELAY
LDPT
LOW DISCHARGE PRESSURE TIMER
LDPT NOTO
RR1
LDP
LOW DISCHARGE PRESSURE RELAY
LDP
LOW DISCHARGE PRESSURE TO PLC
LDP
G
LOW DISCHARGE PRESSURE INDICATION
PSH-1
N.C. OPEN ON HIGH DISCHARGE PRESSURE
0-60 SEC OFF DELAY
HDPT
HIGH DISCHARGE PRESSURE TIMER
HDPT NOTO
RR1
HDP
HIGH DISCHARGE PRESSURE RELAY
HDP
HIGH DISCHARGE PRESSURE TO PLC
HDP
R
HIGH DISCHARGE PRESSURE INDICATION
FLT NCTO
MHT PLF WVFC HDP LDP
WPFR
WPFR
WELL PUMP FAIL TO PLC
HAND OFF AUTO
xoo
0-60 SEC ON DELAY
SUP
CWP
CALL WELL PUMP
oox
CALL WELL PUMP FROM PLC
0-5 MIN OFF DELAY
SUP
WSDT
WELL SHUTDOWN DELAY TIMER
WPA
WELL PUMP IN AUTO MODE TO PLC
xoo
VFD IN HAND MODE TO PLC
WPA
WELL PUMP IN AUTO MODE TO VFD
oox
WPA
WELL PUMP IN AUTO MODE

SEE E-5A FOR CONT.

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

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Designed by D. BAKER | Drawn by M.U. R.U. | Checked by G. HOBSON
PLANS PREPARED UNDER SUPERVISION OF
Date JULY 2017 — GARY J. HOBSON R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

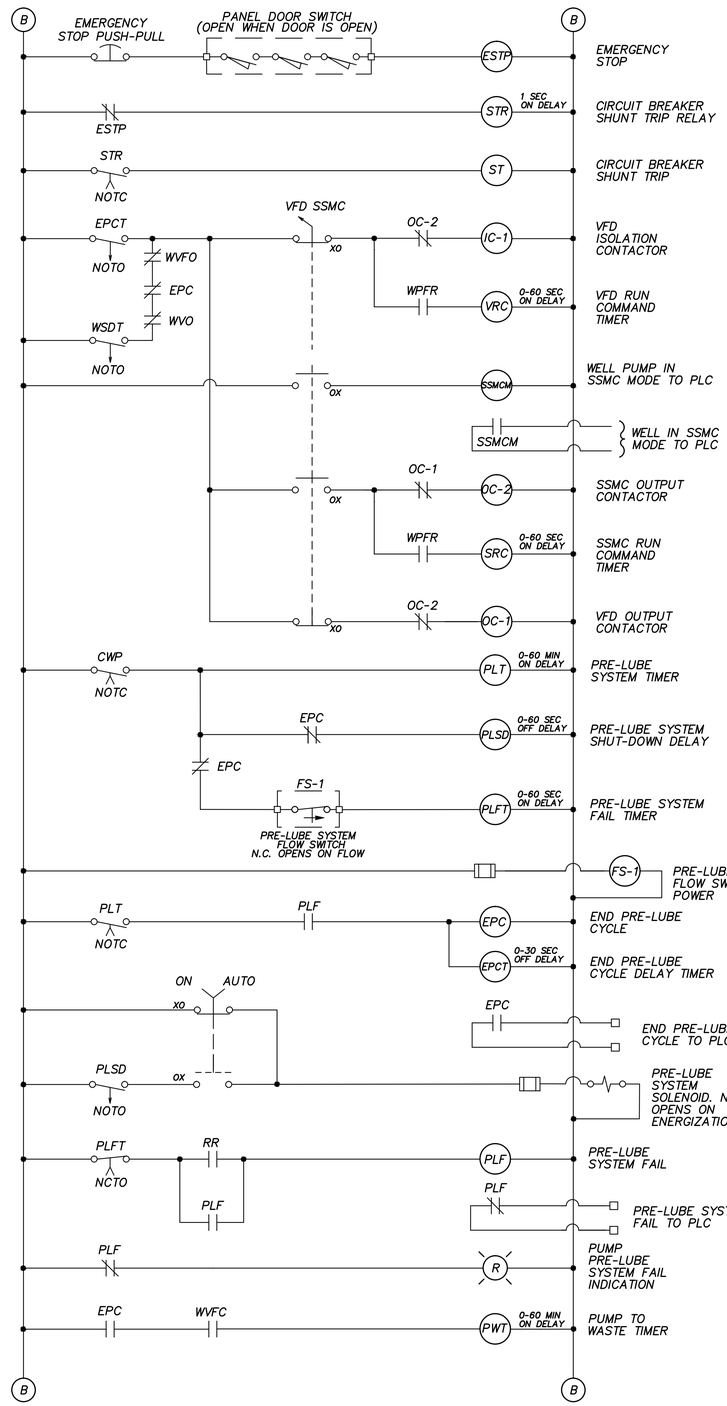
Engineering _____
Operations _____

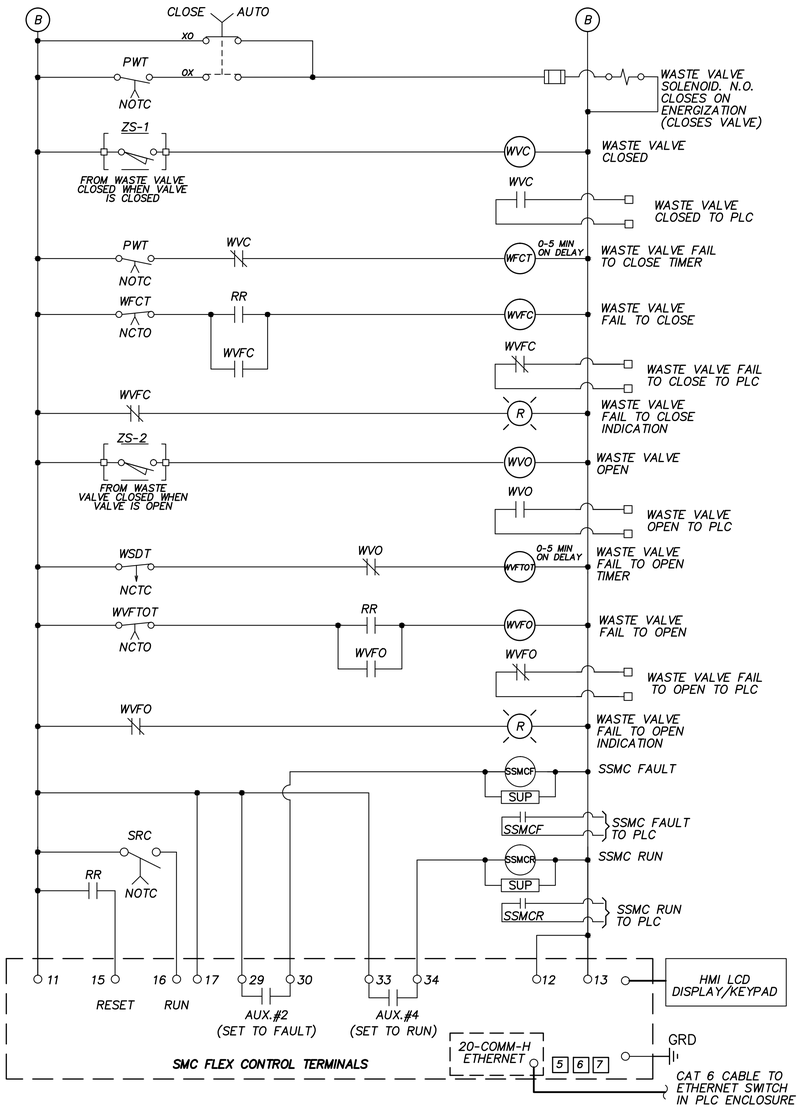
Department of Water and Power Approval
By Vernon R. Weisman 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
WELL VFD CONTROL DIAGRAM I

Drawing No. 13-038U
E-5
Sht. 19 of 21

CONTINUED FROM E-5





REGISTERED PROFESSIONAL ENGINEER
GARY J. HOBSON
40779
Exp. 3/31/19
CIVIL
STATE OF CALIFORNIA

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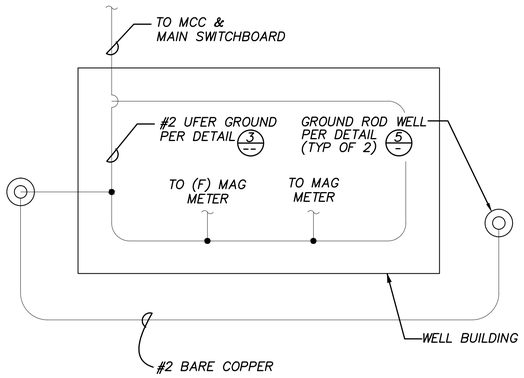
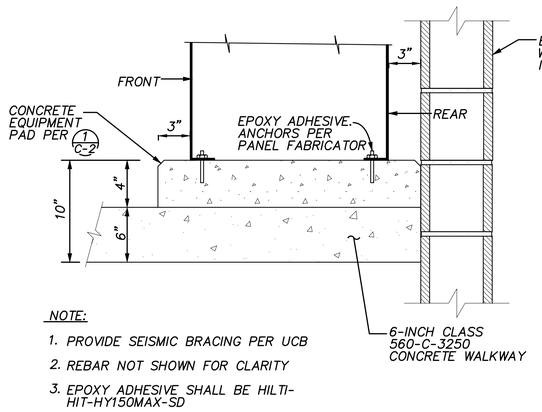
	PLANS PREPARED UNDER SUPERVISION OF Date JULY 2017 — GARY J. HOBSON R.C.E. No. 40779												



ELECTRICAL GROUNDING SYSTEM PLAN 1

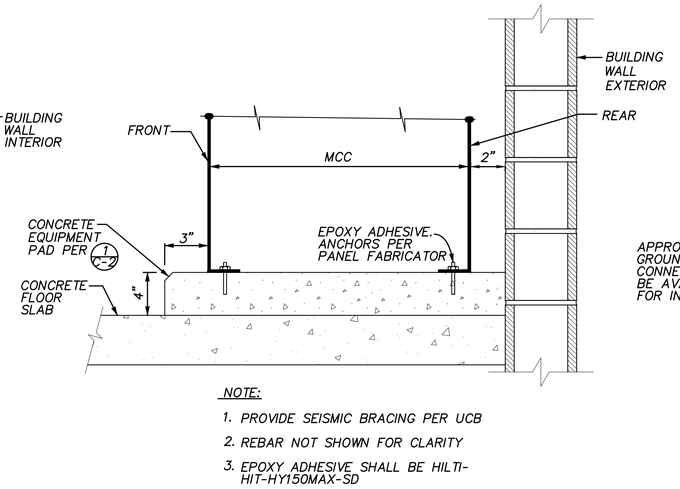
NOT TO SCALE



NOTE:

1. PROVIDE SEISMIC BRACING PER UCB
2. REBAR NOT SHOWN FOR CLARITY
3. EPOXY ADHESIVE SHALL BE HILTI-HIT-HY150MAX-SD

SWITCHBOARD MOUNTING



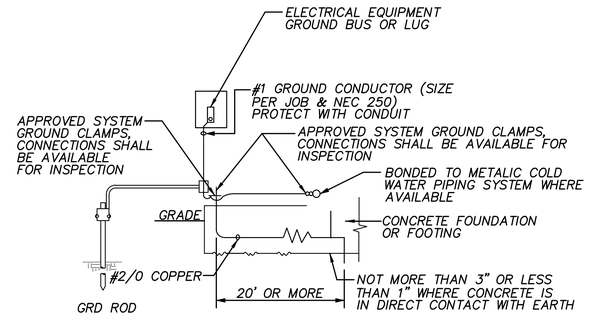
NOTE:

1. PROVIDE SEISMIC BRACING PER UCB
2. REBAR NOT SHOWN FOR CLARITY
3. EPOXY ADHESIVE SHALL BE HILTI-HIT-HY150MAX-SD

MCC MOUNTING

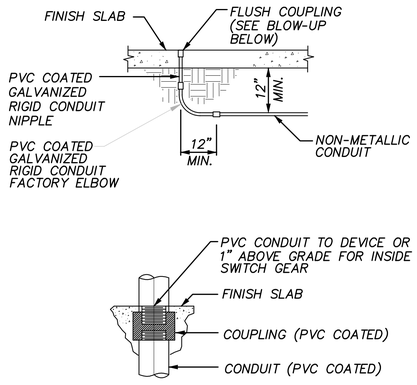
SWITCHBOARD/MCC MOUNTING DETAIL 2

NOT TO SCALE



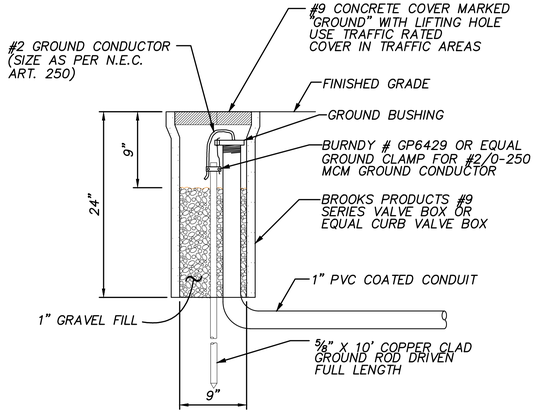
CONCRETE ENCASED (UFER) GROUND DETAIL 3

NOT TO SCALE



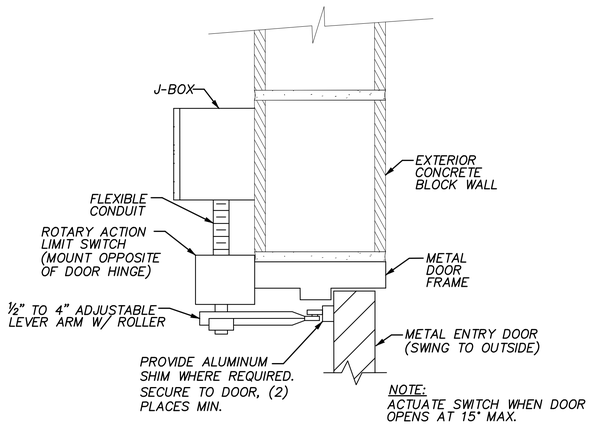
RISER FROM NON METALLIC CONDUIT DETAIL 4

NOT TO SCALE



GROUND ROD DETAIL 5

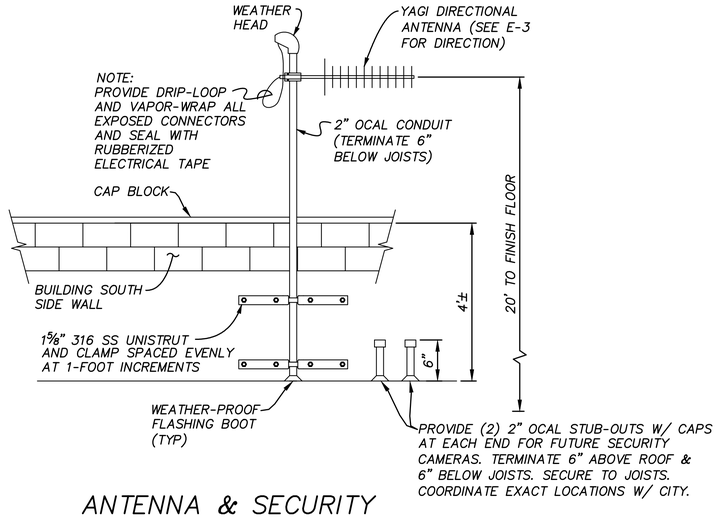
NOT TO SCALE



NOTE:
ACTUATE SWITCH WHEN DOOR OPENS AT 15° MAX.

DOOR ENTRY SWITCH 6

NOT TO SCALE



ANTENNA & SECURITY CAMERA STUB-OUT DETAIL 7

NOT TO SCALE

AKM JOB No. 0761209.00

Underground Service Alert
Call: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

0 ½ 1
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0 ¼ ½
12x18 FORMAT
WARNING IF THIS BAR MEASURES 1/2" THEN DRAWING IS NOT FULL SCALE AND IS 50% REDUCED

Designed by	Drawn by	Checked by
D. BAKER	M.U. R.U.	G. HOBSON

PLANS PREPARED UNDER SUPERVISION OF
GARY J. HOBSON
Date JULY 2017 R.C.E. No. 40779

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

AKM CONSULTING ENGINEERS
553 WALD
IRVINE, CA. 92618
(949) 753-7333

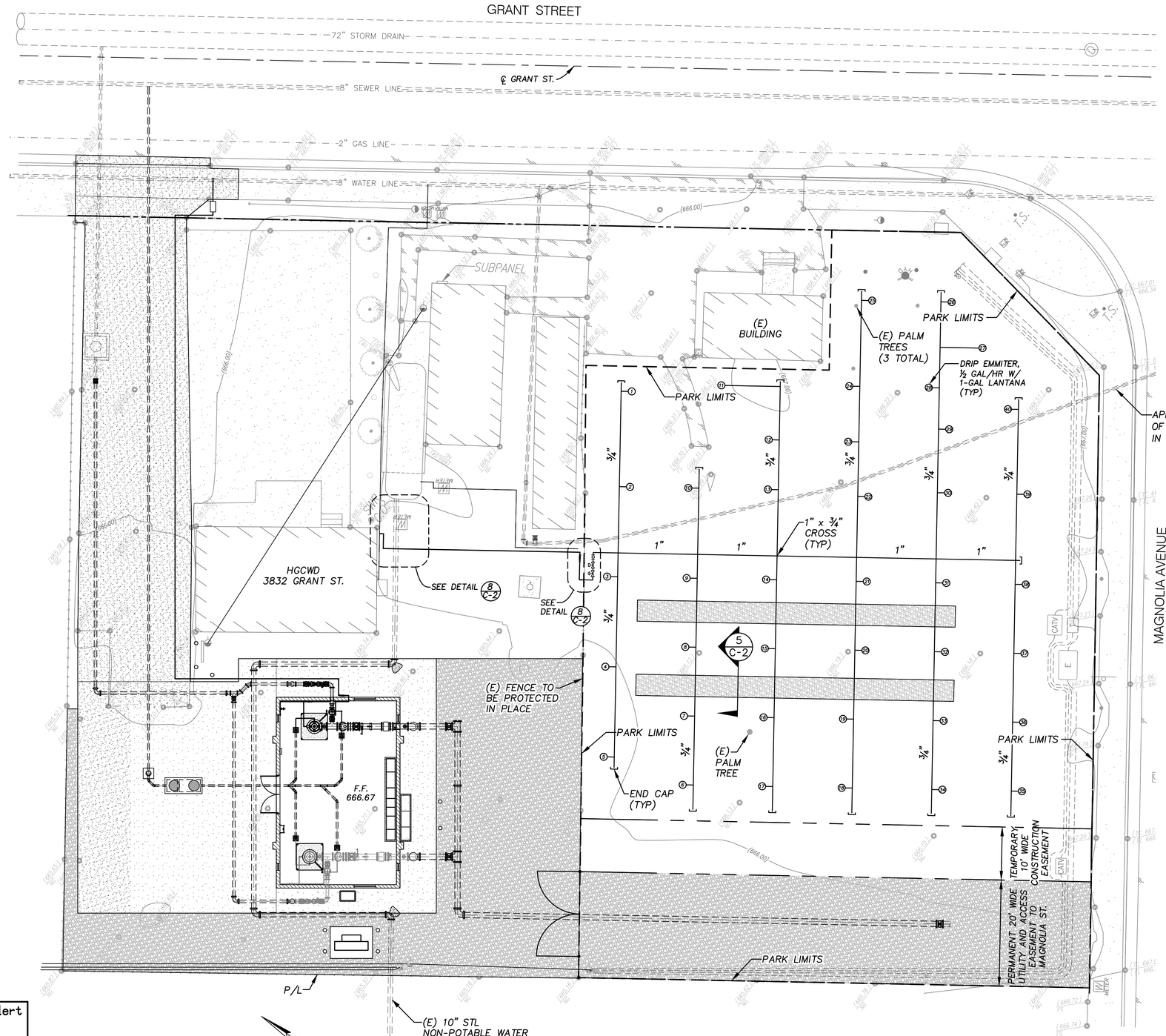
Engineering _____
Operations _____

Department of Water and Power Approval
By _____ 8/4/2017
Vernon R. Weisman, P.E.
District Engineer
R.C.E. No. 41610

REGISTERED PROFESSIONAL ENGINEER
GARY J. HOBSON
No. 40779
Exp. 3/31/19
CIVIL
STATE OF CALIFORNIA

CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
GENERAL ELECTRICAL DETAILS

Drawing No. 13-038U
E-6
Sht. 20 of 21



SITE PLAN

PARK IMPROVEMENT NOTES:

1. *CONTRACTOR SHALL REMOVE ALL EXISTING SURFACE VEGETATION AND DEBRIS WITHIN THE PARK LIMITS INDICATED.*
2. *CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS: INCLUDING BURIED: IRRIGATION SYSTEM, WATER MAINS, SCE ELECTRIC UNDERGROUND, FENCING, UTILITY BOXES, AND TREES NOT IDENTIFIED FOR REMOVAL.*
3. *CONTRACTOR SHALL PROVIDE FINE GRADING TO DIRECT SURFACE FLOW TOWARDS THE CENTER OF THE PARK AND DRAIN TRENCHES.*
4. *CONTRACTOR SHALL CONSTRUCT 2 (EA) DRAIN TRENCHES 60'-LONG. TRENCHES SHALL CONSIST OF GEOTEXTILE FABRIC THAT COMPLETELY WRAPS ¾-INCH UNIFORM/CLEAN GRAVEL. 6-INCH OF TOP SOIL SHALL BE PLACED ON TOP OF THE DRAIN TRENCH. SEE SECTIONS 31 05 16 FOR AGGREGATE AND 33 46 26 FOR GEOTEXTILE FABRIC SPECIFICATIONS. THE CITY SHALL LOCATE TRENCH PLACEMENT FOLLOWING FINE GRADING.*
5. *CONSTRUCT DRIP IRRIGATION SYSTEM PER DRAWING L-1 AND TIE-IN TO (E) WATER SUPPLY PER DETAIL 8, DRAWING C-2.*
6. *CONTRACTOR SHALL PROVIDE AND INSTALL FORTY (40) 1-GALLON SIZE "PURPLE TRAILING LANTANA" (L. MONTEVIDENSIS) PER PLAN, ONE AT EACH DRIP EMITTER.*
7. *CONTRACTOR SHALL PROVIDE 2-INCH MULCH LAYER OVER THE PARK LIMITS INDICATED, EXCLUDING THE CRUSHED ROCK UTILITY AND ACCESS EASEMENT. MULCH SHALL BE UNDERPLAYED BY A GEOTEXTILE WEED BARRIER WITH OVERLAPPING SEEMS. SEE 31 05 19 FOR GEOTEXTILE FABRIC SPECIFICATIONS.*

AKM JOB No. 0761209.00

Underground Service Alert
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TWO WORKING DAYS BEFORE YOU DIG

CAUTION! OVERHEAD POWER LINES

REGISTERED PROFESSIONAL ENGINEER GARY J. HOBSON 40779 Exp. 3/31/19 CIVIL STATE OF CALIFORNIA

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CITY OF CORONA - RESIN TREATMENT OF NITRATE SOURCES
WELLS 32 AND 33 EQUIPPING
LANDSCAPING AND IRRIGATION PLAN

Drawing No. 13-038U
L-1
Sht. 21 of 21